RMJ

Rural Minnesota Journal

Institutional Change: Possibilities for the Future

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Editor's note
Marnie Werner

"Everybody talks about the weather, but nobody does anything about it."

Just like this old axiom, it seems like when we talk about the public institutions in our lives, we treat them the same way: we love to complain about government, our school systems, health care, etc. But the truth is, although quite a bit is said about them, there's also quite a bit done about them — and to them — too.

We're very good at trying new methods, initiating new programs. Hospitals try new ways of tracking patient care and financial reimbursements. A government, state or local, puts in place a new program to process paperwork or tax statements or health care benefits that will hopefully save money. Every school year brings a new curriculum or a new testing method. These are areas we often talk about and tinker with endlessly, in the hope that if we can just find the right combination of action and money, we'll reach a steady state where all the basic issues and problems are solved.

But in this issue of the *Rural Minnesota Journal*, we wanted to look beyond new programs that simply rearrange resources. Instead, we asked a handful of bright people, experts in their fields, to look at fundamentally new ways of doing things. The question we asked them was: "Do we need to substantially change our institutions and/or change the way we do things to succeed in the 21st century?" This is not just change, but institutional change, which is more than just coming up with a new way to do something. Institutional change refers to large-scale change, big sweeping ideas that require big, sweeping changes, and vitally different ways of *thinking* about things.

The articles in this issue cover four different areas: local government and whether it needs a new direction, rethinking how our schools are teaching our children, keeping rural hospitals financially viable, and which direction to head in the ongoing

development of a broadband infrastructure. Do these areas need comprehensive, fundamental change? And if they do, how much? How far do we go?

We all naturally resist change. It's hard work, tiring, kind of scary, and in terms of the type of reforms discussed in this issue, can potentially require a massive reassignment of financial and human capital, especially in the public sector, where systems are built over decades and it's difficult to diverge from a particular way of looking at and assessing things.

Is institutional change necessary? We'll leave that up to you, the reader. We hope that you will find many things to think about as you read this issue and consider change in our systems, whether you are one who makes policy, one who tries to influence it, or one who simply lives within it. But one thing is certain: change is just another word for opportunity. We may never reach that stable state, that political and programmatic nirvana where everything clicks and works from here on in, but that's no reason to stop asking, "What if?"

Chairman's note

Daniel C. Reardon
Board of Directors
Center for Rural Policy & Development

Four public institutions seem to stand out as significantly important, if not critical to our way of life. As Greater Minnesota communities think and plan about local issues, future opportunities, and the quality of their lives, it becomes absolutely necessary to scrutinize how we govern and are governed, receive medical care, educate our children, and communicate electronically.

There are innumerable procedures and policies that steer these four institutions. Our access to health care, its quality and cost is a prime example of how the market place, political policy and local practice impact our lives. Often we do not pay attention to the underlying policies and practices that affect us directly. As communities we want a better education for our children. We typically ask for better-prepared teachers or more money for innovative programs. How often do we probe how the institutions that are central to our lives are run? How often do we focus on who is making the decisions, what processes they are using, and why it is being done that way? We tend to concentrate on the concrete reality before us rather than look under the surface.

My son has a book titled, *How Things Work*. As the Center's editorial committee and board of directors considered this issue of the *Minnesota Rural Journal,* we wanted to challenge you to think about how things work. Empowered with the knowledge of what drives systems, we believe you will be better able to identify new approaches and realign or change the institutions that are there to serve you. We hope we have succeeded.

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Acknowledgements

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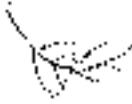
Institutional Change in Local Governance

Anthony J. Filipovitch

"If we want things to stay as they are, they will have to change."
— *The Leopard*, Giuseppi di Lampedusa

There is no subtle or gentle or non-confrontational way to put the question to me, so usually people just blurt it out: "Don't we have too many local governments? Couldn't we get rid of half of them or more and not miss a thing?" It's an interesting question. After all, a primary strategy for business growth today is acquisition and merger. And business "turn-around artists" earn their reputations by coming into struggling operations and pruning out overlapping, redundant, and outdated activities and functions. Wouldn't it just be "good business" for the state to do the same?

It's not that simple, of course. A business is an organization that is disciplined to produce a single (or narrow range of) product(s) — one of Lawrence Peters' principles for excellence is "stick to your knitting." Government, on the other hand, is knitting several things simultaneously. Second, the question is ill formed; it really is smuggling two separate questions: Is there too much government? And, whether or not they are too many, can we afford everything we currently have?

The Functions of Local Government

One of the purposes of local government is to **provide direct service** to people and organizations within its (geographic) boundaries. Even though most people learn in school "How a Bill becomes Law" (using a federal or a state model for this process), it is the local government (which does not write bills, but statutes and ordinances) which most directly touches their lives. When the roads get plowed, or the water tap is turned on, or a fire is put out, it is the local government doing it. Second, the "stakeholders" in these services include people and organizations. Some of the people

are residents, some are visitors. Some of the visitors are commuting workers, some are "tourists." Some of the residents are property owners, some are renters (some are even homeless). Some of the "workers" are business owners (sometimes small business owners, sometimes owners of quite large businesses with operations outside the local community). In addition to human stakeholders, there are many "corporate" stakeholders. Some are business corporations, but some are non-profit or religious organizations. Some are not even formally incorporated, such as recreational sports teams. Third, local governments are inextricably tied to place. Unlike the people and the organizations located there, a local government does not have the choice of seeking greener pastures elsewhere if things turn sour.

A second purpose of local government is to **provide service** to its residents (now broadly understood) **as mandated** on behalf of the state and the federal government. Since the late 19th century, it has been a principle of law that local governments are creatures of the state and may do only what the state permits them to do. Beginning with the New Federalism of the Nixon Administration, local governments have received increasing demands to provide services mandated by the superior levels of government. Usually, the mandates come initially with some funding. Often those funds are subsequently reduced as the state and federal governments discover other issues for which revenues are needed (often, new mandates for local governments).

A third purpose of local government is to **foster democracy** — as Lincoln put it, "government of the people, by the people, and for the people." This is also often referred to as "political power." While it is perhaps an act of faith that one's vote is important among the 120 million cast for President or 2.5 million cast for governor, the connection in local elections is much clearer. Further, most candidates for state and national office first learned their skills in local races and local service. And while few of us will have the opportunity to address the Congress or even the Legislature, the local city council or county commission or school board are much more approachable. Local governments are also central elements for building the capacity for democratic deliberation and action (Hale, 1984, pp. 219-223). As Dennis Gale (2006) points out,

> "The appeal of numerous, small government units
> is that their leaders are more accessible to voters
> and their official proceedings are more difficult
> to camouflage from public scrutiny. Citizens find
> public meetings smaller and less intimidating

and public officials easier to approach. In short,
many people find small governments to be more
responsive. And, it takes a smaller number of voters
to influence official decisions" (p. 68).

In fairness, he also points out that "balkanization has also
permitted local governments to shield more of their local revenues,
preventing state governments from redistributing resources in
order to serve statewide social and environmental purposes more
equitably" (p. 69).

A fourth purpose of local government is to recognize and
reinforce the social networks that we share — to **foster community**.
As Norton Long (1958) put it years ago, a city is an "ecology of
games." This is perhaps the least rational, but often most compelling,
foundation on which local government rests. In the 1960s, when
the idea of the Metropolitan Council was being developed, some
(fool)hardy souls floated the idea of consolidating Minneapolis and
St. Paul into a single city. Every 20 years or so a similar proposal
surfaces for Mankato/North Mankato. These ideas founder because
they ignore local identities. It would be less expensive and much
more efficient if we all dressed the same (think school uniforms or
military uniforms), but we prefer to "express our individuality."
A feeling of identity and social connection is not a trivial issue.
If local government is at the center of democratic capacity, social
connection is the foundation on which it is built. The research on
civic engagement points to tolerance — the ability to grant the other
a different position than one's own — as central to a successful civil
society (Bierman, 1973; Carter, 1998).

How Much Is Enough?

So, to return to the original question, how much is enough? Is
there any empirical evidence for a "best size" for local government?

There will not be a single answer, since the four purposes pull in
different directions. Political participation is fostered by the smallest
feasible size, social cohesion by groups that are small enough for
familiarity but large enough to embody diversity, local service
delivery by a grouping that is large enough to achieve economies of
scale (but not so large as to spawn excess management and logistical
costs), while mandated service delivery is most efficient at very large
sizes (because reporting and auditing costs for the superior unit
increase with the number of units reporting).

Since the "precipitating crisis" is usually fiscal ("We can't afford
all this!"), it would seem logical to argue for larger size. But that

solution can be counterproductive in the long run. While economic efficiency is often the slogan, the battle is in the end political (a democratic government tends to do whatever the people decide they want to do). As long as there is money to do *something*, then the decision about *what* to do becomes political. The political will to provide the various services of government, in turn, depends on the political skill of the electorate and the civility of its people. At least, that is the theory. What is the evidence?

One approach would compare Minnesota to the other states. Minnesota has 87 counties, 845 municipalities, 345 school districts, and almost 2,000 townships. How does that **compare to other states** when it comes to cities, counties, townships, and special districts?

Figure 1: Counties and states in continental United States.

Simply counting the number of local government units will not work — Wyoming (the state with the fewest people) and Rhode Island (the state with the smallest area) should have many fewer compared, say, to Texas (the largest state in the lower 48) or California (the most populous state). There is a wide range across the United States in the size of counties, for example (Figure 1). The larger counties tend to be west of the Mississippi, especially west of the Plains. Minnesota appears to fit somewhere in the middle.

Standardizing for population and area, Minnesota does in fact fall toward the middle of the pack of U.S. states (Table 1). Minnesota is 31st in population density (people per square mile), 30th in average

Table 1: *Comparison of sub-state government units.*

	Population Density (Population/mile)	Average County Size (Population/county)	Average County Area (miles/county)	Average City Size (Population/city)	Average City Area (miles/city)	Average Township Size (Population/township)	Average Township Area (miles/township)	Average School District Size (Population/school district)	Average School District Area (miles/school district)
US	80	93,010	1,251	14,524	195	17,098	230	20,894	281
Alabama	88	66,453	782	9,872	116	NA	NA	34,784	410
Alaska	1	52,292	55,272	4,211	4,451	NA	NA	NA	NA
Arizona	45	344,400	7,600	59,379	1,310	NA	NA	22,364	493
Arkansas	51	35,713	709	5,368	107	NA	NA	8,640	172
California	217	596,540	2,872	71,585	345	NA	NA	32,476	156
Colorado	42	69,789	1,679	16,026	386	NA	NA	23,774	572
Connecticut	703	NA	NA	113,742	185	22,901	37	200,721	326
Delaware	401	262,147	830	13,797	44	NA	NA	41,392	131
Florida	296	243,165	996	39,725	163	NA	NA	168,936	692
Georgia	141	52,757	381	15,499	112	NA	NA	45,723	330
Hawaii	189	404,042	3,644	1,212,125	10,931	NA	NA	NA	NA
Idaho	16	29,538	1,899	6,498	418	NA	NA	11,204	720
Illinois	223	121,958	568	9,636	45	8,693	40	13,319	62

Indiana	170	66,945	400	10,744	64	6,044	36	20,721	124
Iowa	52	29,580	568	3,089	59	NA	NA	7,587	146
Kansas	33	25,891	791	4,295	131	2,073	63	8,311	254
Kentucky	102	34,025	340	9,550	95	NA	NA	23,006	230
Louisiana	103	74,492	864	14,800	172	NA	NA	67,720	785
Maine	41	79,837	2,212	58,064	1,608	2,735	76	12,903	357
Maryland	542	230,937	539	33,831	79	NA	NA	NA	NA
Massachusetts	810	1,272,426	2,111	141,381	235	20,791	34	77,587	129
Michigan	175	119,953	1,165	18,679	181	8,016	78	17,166	167
Minnesota	62	56,710	999	5,777	102	2,752	48	14,301	252
Mississippi	61	34,741	591	9,624	164	NA	NA	17,370	295
Missouri	81	49,178	611	5,926	74	17,969	223	10,459	130
Montana	6	16,732	2,723	7,004	1,140	NA	NA	2,567	418
Nebraska	22	18,422	832	3,226	146	3,841	173	2,980	135
Nevada	18	126,138	6,910	106,222	5,819	NA	NA	118,718	6,504
New Hampshire	138	124,055	935	95,427	719	5,613	42	7,428	56
New Jersey	1134	401,605	415	26,030	27	34,850	36	15,362	16
New Mexico	15	55,198	3,685	18,035	1,204	NA	NA	18,974	1,267
New York	402	333,314	957	30,842	89	20,451	59	27,817	80

N. Carolina	165	80,784	538	14,932	99	NA	NA	NA	NA
N. Dakota	9	12,097	1,334	1,781	196	481	53	2,837	313
Ohio	277	129,134	509	12,063	48	8,688	34	17,037	67
Oklahoma	50	44,861	908	5,855	118	NA	NA	6,050	122
Oregon	36	95,308	2,733	14,296	410	NA	NA	14,538	417
Penn.	274	186,156	698	12,069	45	7,947	30	23,811	89
Rhode I.sland	1003	NA	NA	131,343	193	33,895	50	262,686	386
S. Carolina	133	87,469	696	14,957	119	NA	NA	47,336	377
S. Dakota	10	11,451	1,168	2,454	250	804	82	4,294	438
Tennessee	138	61,990	458	16,341	121	NA	NA	407,361	3,010
Texas	80	82,478	1,057	17,516	225	NA	NA	19,237	247
Utah	27	77,350	2,928	9,505	360	NA	NA	56,078	2,122
Vermont	66	43,567	687	12,977	205	2,574	41	2,155	34
Virginia	179	74,780	450	31,022	187	NA	NA	7,104,078	42,774
Washington	89	151,570	1,828	21,187	256	NA	NA	19,970	241
W. Virginia	75	32,863	441	7,724	104	NA	NA	32,863	441
Wisconsin	99	74,645	910	9,187	112	4,249	52	12,159	148
Wyoming	5	21,484	4,253	5,042	998	NA	NA	8,984	1,778

Source: US Census, 2000

population per county (two states have none), 34th in the number of school districts by population, and 16th among the 20 states that report townships. If anything, the state is over-represented in cities, placing 42nd in population per city. Similarly, Minnesota is 30th in the average size of its counties and school districts, 11th of 20 in the size of its townships and 47th in the size of its cities (so our townships are a little larger and our cities are a little smaller than our other rankings would predict).

Based on a simple standardized comparison with other states in the Union, the number and size of local governments in Minnesota appears to be in rough parity to the size of the state itself.

But perhaps comparison to other states is beside the point — excellence, after all, means "best in class," not "in the middle of the pack." Are there some **absolute standards** that could be used to determine the sufficiency of local government supply?

One of the common functions of counties is public health. The California Primary Care Association recommends that the "rational service area" for health care should not be greater than a 30-minute travel time (CPCA, 2005). Assuming travel by way of County State-Aid Highways, a 20-mile radius would meet this assumption, resulting in a maximum county size of approximately 1,250 square miles. This also happens to be close to the average size for counties in the United States (1,251 square miles). Minnesota's average is 999 square miles; 69 counties are less than 90% of the theoretical target, while 16 exceed it by more than 10% (Table 2). Theoretically, the state could be reorganized into 70 counties, consolidating some and splitting others. While such a reformulation could result in improved geographic accessibility, it will not have a similar impact on population: The correlation between county area and county population size is practically zero (the smallest county, Ramsey, is one of the more populous in the state, but so is the largest, St. Louis).

There are performance outcomes other than geographic accessibility that might also be used to measure local government performance. Economic strength might be measured by average earnings (or, perhaps better, by change in average earnings). Social strength could be measured by average unemployment rate, poverty rate, infant mortality rate, graduation rates, crime rates, environmental pollution, or traffic safety (depending on what facet of social networks or social service delivery one is emphasizing). Fiscal efficiency could be measured by per-capita public debt and political involvement could be measured by percent voting. These are just a small sampling of the myriad measures that have been used in the past, but they are all measures readily available from the

Table 2: *Minnesota counties ranked by area.*

	Pop.	Area (sq. mi.)		Pop.	Area (sq. mi.)
St. Louis	200,528	6,860	Freeborn	32,584	723
Cook	5,168	3,340	Nobles	20,832	722
Koochiching	14,355	3,154	Faribault	16,181	722
Beltrami	39,650	3,056	Lyon	25,425	721
Lake	11,058	2,991	Douglas	32,821	720
Itasca	43,992	2,928	Murray	9,165	720
Cass	27,150	2,414	Jackson	11,268	719
Otter Tail	57,159	2,225	Pope	11,236	717
Polk	31,369	1,998	Wright	89,986	714
Aitkin	15,301	1,995	Mower	38,603	712
Marshall	10,155	1,813	Mille Lacs	22,330	682
Lake of the Woods	4,522	1,775	Olmsted	124,277	655
Roseau	16,338	1,678	Cottonwood	12,167	649
Becker	30,000	1,445	Meeker	22,644	645
Pine	26,530	1,435	Winona	49,985	642
Stearns	133,166	1,390	Brown	26,911	619
Crow Wing	55,099	1,157	Pennington	13,584	618
Morrison	31,712	1,153	Hennepin	1,116,200	606
Kittson	5,285	1,104	Sibley	15,356	600
Clay	51,229	1,053	Chippewa	13,088	588
Clearwater	8,423	1,030	Dakota	355,904	586
Hubbard	18,376	999	Traverse	4,134	586
Renville	17,154	987	Mahnomen	5,190	583
Todd	24,426	979	Stevens	10,053	575
Redwood	16,815	881	Grant	6,289	575
Norman	7,442	877	Houston	19,718	569
Carlton	31,671	875	Wabasha	21,610	550
Fillmore	21,122	862	Lincoln	6,429	548
Kandiyohi	41,203	862	Wadena	13,713	543
Goodhue	44,127	780	Kanabec	14,996	533
Lac qui Parle	8,067	778	Big Stone	5,820	528
Blue Earth	55,941	766	Rice	56,665	516
Yellow Medicine	11,080	763	McLeod	34,898	506
Swift	11,956	752	Rock	9,721	483
Wilkin	7,138	752	Le Sueur	25,426	474
Martin	21,802	730	Nicollet	29,771	467
			Pipestone	9,895	466

Isanti	31,287	452
Sherburne	64,417	451
Anoka	298,084	446
Chisago	41,101	442
Watonwan	11,876	440
Dodge	17,731	440
Waseca	19,526	433
Red Lake	4,299	433
Steele	33,680	432
Washington	201,130	423
Benton	34,226	413
Carver	70,205	376
Scott	89,498	369
Ramsey	511,035	170
Correlation	-0.02	

Source: U.S. Census, 2000

U.S. Census Bureau.

Comparing states on these performance measures (Table 3), Minnesota (which is in the middle of the pack in size and area of local government units) is highest in voting, third highest in high school graduation and third lowest in unemployment, fourth lowest in poverty, eighth lowest in infant mortality, 11th lowest in violent crime, 12th highest in change in earnings, and 17th lowest in toxic chemical releases. The only measure in which it does not outperform the majority of states is public local debt, where it is fourth highest. Granted, a more detailed (county-by-county) analysis might reveal relationships that were obscured by using state averages. And a case can certainly be made for using other, or more sophisticated, performance measures (toxic chemical spills, for example, might be standardized by the level of manufacturing to present a more fair comparison). But at least initially, it appears that Minnesota's relatively smaller, less populous local governments are performing quite well.

In fact, these data raise the question whether there is any relationship between size (whether in population or area) and performance. Table 4 summarizes the correlations between local government size (population and area, by state) and state performance on key outcomes. The results are not particularly impressive. Out of 80 possible relationships, 17 (less than 20%) showed a correlation of .30 or higher (the strength of a correlation is measured by the square of its value, so a correlation of .30 would explain slightly less than 10% of the variance in performance). School district size had no significant relationship to any of the performance outcomes, and the only relationship for cities was that states with smaller cities tended to have lower unemployment rates. States with townships of fewer people generally performed better (less crime, higher voting rates, higher graduation rates, lower unemployment), although they also had more highway deaths. States with spatially larger townships tended to have fewer highway deaths. On the

Table 3: *Performance outcomes of local government.*

	Infant Mortality, 1998	Violent Crime Rate, 1999	Toxic Chemical Release, 1999	Percent Voting, 1998	Motor Vehicle Deaths per vehicle mile	Per capita debt, local govt.	High School Grad or more	Poverty Rate	Unemploy-ment Rate	Change in average earnings
US	7.2	524.7	2,488,406,889	33.2	1.6	2,619	83.4	11.8	4.2	4.3
Alabama	10.2	490.2	89,519,922	37.4	2	1,751	81.1	15.1	4.8	3.8
Alaska	5.9	631.5	1,948,559	54.1	1.6	6,375	92.8	7.6	6.4	0.6
Arizona	7.5	551.2	54,346,031	29.9	2.2	3,577	83.1	12	4.4	4.1
Arkansas	8.9	425.2	50,743,995	28.3	2.2	1,263	78.9	14.7	4.5	3.9
California	5.8	627.2	43,688,750	33.7	1.1	2,972	80.4	13.8	5.2	6.3
Colorado	6.7	340.5	5,473,006	43.1	1.4	4,178	90.4	8.3	2.9	6
Connecticut	7	345.6	7,604,324	39.1	1.1	1,216	83.7	7.1	3.2	4.3
Delaware	9.6	734	5,503,568	32.5	1.4	1,628	84.5	10.4	3.5	3.3
Florida	7.2	854	78,499,582	10.8	2	3,461	82.7	12.4	3.9	2.6
Georgia	8.5	534	64,867,232	29.2	1.7	2,385	80.7	12.9	4	4.8
Hawaii	6.9	235	435,831	46.5	1.5	1,687	88	10.9	5.6	2.5
Idaho	7.2	244.9	22,750,923	43	2	722	84.8	13.9	5.2	4.7
Illinois	8.4	732.5	116,483,095	37.1	1.4	2,277	85.4	9.9	4.3	4.5
Indiana	7.6	374.6	120,941,009	36	1.4	1,368	82.9	6.7	3	3.2
Iowa	6.6	280	40,100,994	42.8	1.6	1,851	89.7	7.5	2.5	3.5
Kansas	7	382.8	29,137,835	38.9	1.8	2,644	87.6	12.2	3	4.4

Kentucky	7.5	300.6	41,033,286	37.2	1.9	3,181	78.2	12.1	4.5	3.9
Louisiana	9.1	732.7	175,603,883	10	2	2,032	78.3	19.2	5.1	1.2
Maine	6.3	112.2	9,636,269	44.2	1.4	1,273	88.9	10.6	4.1	3.9
Maryland	8.6	743.4	13,251,453	38.4	1.3	2,382	84.7	7.3	3.5	3.5
Mass.	5.1	551	7,278,796	37.9	0.8	1,730	85.1	11.7	3.2	6.8
Michigan	8.2	574.9	83,648,982	41.3	1.5	1,818	85.5	9.7	3.8	3.4
Minnesota	5.9	274	19,870,654	59.2	1.3	3,732	91.1	7.2	2.8	4.4
Mississippi	10.1	349.3	60,520,702	27.9	2.9	1,373	78	16.1	5.1	2.4
Missouri	7.7	500.2	57,045,614	39.6	1.8	1,223	85	11.6	3.4	3.6
Montana	7.4	206.5	51,377,382	50.7	2.5	831	88.8	15.6	5.2	2.7
Nebraska	7.3	430.2	16,186,981	44.1	1.8	2,871	89.3	10.9	2.9	4.3
Nevada	7	570	4,204,845	31.6	2.2	3,545	86.4	11.3	4.4	3.3
New Hamp.	4.4	96.5	2,970,927	36.4	1.1	1,019	86.5	7.7	2.7	3.9
New Jersey	6.4	411.9	19,959,412	30	1.2	1,939	87.4	7.8	4.6	(NA)
New Mex.	7.2	834.5	24,827,806	39.7	1.9	1,841	80.9	20.7	5.6	2.2
New York	6.3	588.8	35,489,850	31.8	1.1	4,061	81.9	14.1	5.2	3.6
N. Carolina	9.3	542.1	76,800,683	34.4	1.9	2,427	79.8	13.5	3.2	4.5
N. Dakota	8.6	66.9	2,449,976	46.3	1.3	1,514	84.9	13	3.4	3.3
Ohio	8	316.4	153,558,752	40.8	1.3	1,442	86.1	12	4.3	3.3
Oklahoma	8.5	508.2	24,397,829	35.4	1.8	1,561	83.5	12.7	3.4	2.5

Oregon	5.4	374.9	33,180,800	44.1	1.6	1,889	86.2	12.6	5.7	4.5
Penn.	7.1	420.5	145,737,350	32.4	1.5	3,199	86.1	9.4	4.4	3.5
Rhode I.	7	286.6	1,751,380	40.4	1	801	80.9	9.9	4.1	3.4
S. Carolina	9.6	847.1	59,695,616	34.6	2.4	1,932	78.6	11.7	4.5	3.7
S. Dakota	9.1	167.4	3,251,231	48.9	2	970	88.7	7.7	2.9	4.5
Tennessee	8.2	694.9	94,907,549	22.4	2	3,487	79.1	11.9	4	3.7
Texas	6.4	560.3	262,681,842	24.6	1.7	2,979	78.2	15	4.6	4.4
Utah	5.6	275.5	106,252,499	33.4	1.7	4,432	91	5.7	3.7	3.8
Vermont	7	113.8	417,357	48.5	1.6	897	89.3	9.7	3	3.7
Virginia	7.7	314.7	56,848,332	23.1	1.3	2,024	87.3	7.9	2.8	5.2
Washington	5.7	377.3	32,108,843	44.5	1.3	4,526	91.2	9.5	4.7	8
W. Virginia	8	350.6	26,185,485	25.1	1.9	2,146	75.1	15.7	6.6	2.9
Wisconsin	7.2	245.9	43,780,692	44.2	1.3	2,001	86.8	8.6	3	3.7
Wyoming	7.2	232.3	9,437,664	50.4	2	2,259	90.7	11.6	4.9	3.7

Source: US Census Statistical Abstracts, 2000.

Relation	County Size	County Area	City Size	City Area	Township Size	Township Area	School Size	School Area
Infant mortality	-0.34	-0.22	-0.14	-0.18	-0.26	0.22	0.04	0.03
Crime	0.24	0.13	-0.13	-0.07	0.38	0.16	-0.06	-0.05
Taxes	-0.13	-0.18	-0.18	-0.25	-0.13	-0.13	0.02	0.00
Voting*	-0.12	0.28	0.11	0.21	-0.54	0.14	-0.24	-0.23
Vehicle Deaths	-0.47	0.01	-0.14	0.07	-0.55	0.58	-0.13	-0.07
Debt	0.05	0.54	-0.10	0.15	-0.09	-0.01	-0.02	0.03
High School Graduation*	-0.03	0.30	0.09	0.25	-0.57	0.14	0.07	0.10
Poverty	-0.03	-0.15	-0.05	-0.03	0.00	0.26	-0.17	-0.16
Unemploy- ment	0.03	0.37	0.19	0.34	0.50	-0.19	-0.20	-0.17
Average Pay*	0.37	-0.37	-0.10	-0.29	0.13	-0.07	0.16	0.14

* Higher, rather than lower, values preferred; correlation direction reversed.

Table 4: *Correlations between size, area, and performance.*

other hand, states with more people per county tend to have lower
infant mortality, fewer highway deaths, and higher average pay,
while spatially smaller counties tend to have lower debt, lower
unemployment, and also have higher average pay (they also tend
to have lower graduation rates). In other words, even the few
performance outcomes that are significantly related to size of local
government tend to point in different directions.

Researchers have attempted to provide a more detailed, nuanced
analysis of the impact of local government size through **case studies**
of city/county consolidations. Parks & Oakerson (1993) studied
local government fragmentation in St. Louis City/County (MO)
and Allegheny County/Pittsburgh area (PA). They found that a
large number of local governments does not necessarily translate
to ineffective organization and poor performance. Counties can,
in fact, serve as an institutional frame within which integrating
structures can be built among local units of government. Blomquist
& Parks (1995) examined in detail the impacts of the formation
of Indianapolis/Marion County Unigov in 1969. They found that
consolidation stabilized political leadership by reinforcing single-
party leadership, that it shifted public funding toward private

subsidies, and shifted a greater share of its expenditures to state and federal funding. They found little evidence that it reduced the number of service-providing units, or improved central-city residents' satisfaction with local public services, or that it redistributed the financial base for local services. Savitch & Vogel (2004), in their study of recently consolidated Louisville/Jefferson County (KY), found that service disparities actually increased and few managerial efficiencies were obtained, but political power *was* redistributed (to the suburbs, away from the working-class and more ethnically diverse core city).

To sum it up, a review of the research on city/county consolidation commissioned by the National Research Council concluded that "(t)here is general agreement that consolidation has not reduced costs (as predicted by some reform advocates) and, in fact, may have even increased total local expenditures" (Altshuler *et alii*, 1999, p. 106).

Can We Afford Them All?

Our system of local government can trace it roots back more than a millennium, to the medieval system (a "county" was the domain of a Count; cities can be traced to the walled forts, and towns to the village and its surrounding farmland). In Minnesota, this system (except for the formation of the Metropolitan Council and the Regional Development Commissions in the 1970s) has remained basically the same since statehood. But can a system that was designed for the horse-and-buggy still carry its weight in the 21st century?

Mulder (2006) recently questioned in this journal the long-term sustainability of county government as we know it today. "Massive reduction" in state aid, cost shifting from state and federal government to local levels, state-mandated levy limits on local taxation, and growing demands for new services (Homeland Security and disaster preparedness, community wireless initiatives, watershed management and clean water protection, to name a few) are all requiring that counties change the way they do business.

Geller (2007), pointing to small rural towns' loss of main street businesses and local industries and the closure of local schools, considers whether rural towns are "functionally dead." In response he argues that rural communities should be re-imagined as "spatially separated neighborhoods" — not necessarily free-standing, self-sufficient entities but part of a self-sustaining regional entity. In this sense, local cities (and even counties) are not in competition with each other for economic development activities, but all share in

the common wealth that is created. This can be a useful metaphor, although in some crucial respects it may be lacking. For example, neighborhoods in a city share a common tax base so funding for residential neighborhoods can be supplemented with funds collected from other neighborhoods. While voluntary tax-base sharing in the Twin Cities (the "Minnesota Miracle" of the 1970s) worked (at least for a while), it is a very difficult consensus to achieve and maintain.

There are a number of trends that are changing the environment in which local governments have to operate:

- **The Price of Government:** As already noted by Mulder, the way local governments obtain and direct resources is changing. In the recent past, as much as 25% of local government funding came from transfers and grants from state and federal government (Levy, 2000), but that arrangement is unraveling as the superior units of government look for ways to continue to offer their services without raising taxes. In addition, voters appear to be increasingly resistant to property and income taxes, apparently preferring fees and other forms of user charges.

  This approach is the logical culmination of the "Reagan revolution," which asked whether you (individually) were better off today than yesterday, and declared that "government is the problem, not the solution." In this rise of neo-classical economic theory, one is urged not to seek the common good or common solutions but rather to seek one's own good in the faith that the common good will follow from those individual decisions. Fees maintain the nexus between funds paid and benefits received, while taxes permit policy makers to break that link and redistribute benefits to citizens who have not paid (or not paid full value) for them.

  In addition to shifting *how* local government is funded, there are recurring demands to operate local government more efficiently, "like a business" (this issue has a long history, going back at least to the Progressive Era in the early 20th Century; see Levy, 2000). But while mass production enabled the incredible productivity gains of the Industrial Era, often there are no clear economies of scale in service industry. One often trades responsiveness for price, and as many retailers are discovering, service can trump price. In addition, even where there are some efficiencies due to size, they carry with them span of control issues. Depending

on the size of the forces being combined, combining police services for several cities may not produce much in the way of savings as more lieutenants and mid-level officers have to be hired to provide the supervision formerly provided by the several police chiefs.

- **Environmental degradation:** While environmental issues tend to involve entire airsheds or watersheds, the solutions are often found at a local level. Especially at the county level, local governments are finding themselves playing new roles in environmental regulation and monitoring.

- **Transportation:** Transportation is becoming a subset of environmental planning as a number of environmental problems (like air quality, but also land use) are being tied to the way we choose to move ourselves and goods. It is difficult to lower one's carbon footprint if one has only one choice for transportation. In rural areas, the solution to the transportation puzzle is more difficult because so few of the solutions are purely local.

- **Affordable Health Care/Mental Health Care:** The cost of and access to provision for health care continues to confound some of the best minds in business and industry and the government sector. While health care is a significant problem and has a significant impact on rural areas, the solution will probably be developed at the state or federal level.

- **Crime (Gangs & Drug Abuse):** In recent years, there have been a number of stories about rural methamphetamine production and use and the spread of urban gangs into outlying rural cities. While these are perceived as real issues, local communities already collaborate extensively on these issues.

- **Elderly:** The demographics are clear. Rural Minnesota is growing older (Gillaspy, 2006). The elderly bring with them demands for different types and levels of services than heretofore, and they will relocate to communities that can provide those services, further exacerbating the dislocation in rural areas.

- **Employment:** Globalization is changing the face of employment, although its impact on rural Minnesota is not yet clear. Some rural areas around the country have taken advantage of the Internet to become virtual backshops for businesses that have their headquarters in metropolitan areas. On the other hand, corporate buyouts and mergers can have a much greater impact in rural communities, as the few locally developed businesses are merged into larger corporations and the local community is stripped of its few upper-management jobs.

So … What?

As Sancho Panza says in *Don Quixote*, "Whether the pitcher hits the stone or the stone hits the pitcher, it's going to be hard on the pitcher." Even if we are not oversupplied with local governments, how are they to respond to the challenges globalization is ushering in?

Bollens & Schmandt (1975) point out that there are significant barriers to intergovernmental coordination and reform (whatever form it takes). Most Americans share an underlying cultural aversion to "big government." And our constitutional tradition and legal system give a certain priority to the Jeffersonian tradition of grassroot involvement and the Jacksonian tradition of local self-rule. Further, our political system gives significant weight to the status quo through the advantages of incumbency and its access to the mass electorate.

On the other hand, change does happen. Generally, they found that the push for change tends to be initiated by civic and business organizations, the press, or local officials. The arguments for it are usually based on issues of efficiency, economy, and improved economic base, and are aimed at resolving overlapping jurisdictions, government fragmentation, confusion of responsibility, outmoded administrative structure, and uncoordinated growth (Bollens & Schmandt, 1975, p. 322). The opposition is usually based on arguments of higher taxes and loss of grass-roots government. In most cases, the reformers are at a disadvantage. Generally, 80% of the citizenry at any time are satisfied with current services, and neither the problems nor the possible remedies are easily articulated in simple and readily understandable terms. At the outset, voters tend to be ignorant about the issues and apathetic in their response. On the other hand, ignorance is manipulable and can go either way (if voters are apathetic because they do not understand the significance of an issue, an education campaign can readily turn them around).

If voters are dissatisfied with the level or type of service they are receiving, it significantly increases the odds of a successful campaign for change. Successful reform campaigns, they find, need an "accelerator," a dramatic event of some sort that can highlight the problem and focus voters' discontent. It may well be that any one (or some combination of several) of the trends listed above will yet serve as an accelerator for reforming local government in rural Minnesota.

There is, however, more than one way that reform might be pursued. Bollens and Schmandt (1975) list three strategies by which communities can respond to changes in the environment:

- **Consolidation:** Create one from many, through annexation or consolidation or merger. This is what is done when cities deal with the problem of sprawl by annexing the surrounding townships. It is the proposal that reappears from time to time for merging neighboring counties into larger units.
- **Federated Approach:** In this approach, some independence is retained for the prior units, while some functions are consolidated into a larger body. This is the model used for the Metropolitan Council and for the Comprehensive County Planning Statute. It is the model that created Miami/Dade County and Toronto Megacity.
- **Cooperation:** The least restrictive, this is also the most commonly used response. Almost every local government has at least some cooperative agreements with other local units (for police and fire protection, sometimes for shared use of equipment, etc.) This is the model behind the Councils of Government and Joint Powers agreements. In a sense, this model could also include privatization (Deller, 1998), where the partner is not another unit of government but is instead a private (nonprofit or proprietary) organization.

Note, then, that for Bollens & Schmandt it is not a question of whether or not consolidation is required; the question is which of a number of possible strategies is best suited to respond to the specific changes that a community is facing. The question is not "Do we have too many units of government?" Rather, the real question is, "How are we using the units of government that we have? Are there better ways for those units to achieve our goals?"

References

Altshuler, A., *et alii*, eds. 1999. *Governance and Opportunity in Metropolitan America*. Washington, DC: National Academy Press.

Bierman, A.K. 1973. *The Philosophy of Urban Existence*. Athens: Ohio University Press.

Blomquist, W. & R.B. Parks. 1995. "Fiscal, Service, and Political Impacts of Indianapolis-Marion County's Unigov," *Publius*, *25*(4), 37-54.

Bollens, J.C. & H. J. Schmandt. 1975. *The Metropolis: Its People, Politics, and Economic Life, 3rd Ed.* NY: Harper & Row

California Primary Care Association. 2005. "A Nation's Health at Risk III" Sacramento, CA: California Primary Care Association (http://www.cpca.org/govaffairs/fedissues/documents/AddendumtoNACHCRepJuly05_FINAL.pdf)

Carter, S.L. 1998. *Civility: Manners, Morals, and the Etiquette of Democracy*. NY: Basic Books.

Deller, S.C. 1998. "Local Government Structure, Devolution, and Privatization," *Review of Agricultural Economics, 20*(1), 135-154.

Gale, D.E. 2006. *Greater New Jersey: Living in the Shadow of Gotham.* Philadelphia, PA: University of Pennsylvania Press.

Geller, J. 2007. "Are Our Small Towns Functionally Dead?" St. Peter, MN: Center for Rural Policy & Development (http://www.mnsu.edu/ruralmn/pages/Publications/Commentary/comm2007/FOH07-01.php)

Gillaspy, R.T. 2006. "The Demographics of Ruralplexes," *Rural Minnesota Journal*, *1*, 33-40.

Hale, D. 1984. "The City as Polity & Economy," *Polity, 17*(2), 205-224.

Levy, J.M. 2000. *Urban America: Processes & Problems*. Upper Saddle River, NJ: Prentice Hall.

Long, N. 1958. "Local Community as an Ecology of Games," *American Journal of Sociology, 64*, 251-261.

Mulder, J. 2006. "Minnesota County Government: A History of Accomplishment, A Commitment to the Future," *Rural Minnesota Journal, 1,* 93-110.

Orfield, M. 1997. *Metropolitics: A Regional Agenda for Community and Stability*. Washington, DC: Brookings Institution Press.

Parks, R.B. & R.J. Oakerson. 1993. "Comparative Metropolitan Organization: Service Production and Governance Structures in St. Louis (MO) and Allegheny County (PA)," *Publius, 23*(1), 19-39.

Savitch, H.V. & R.K. Vogel. 2004. "Suburbs Without a City: Power and City-County Consolidation," *Urban Affairs Review, 39*(6), 758-790.

The Road Not Taken
Gail Miller

The Road Not Taken

Two roads diverged in a yellow wood,
And sorry I could not travel both
And be one traveler, long I stood
And looked down one as far as I could
To where it bent in the undergrowth;

Then took the other, as just as fair,
And having perhaps the better claim,
Because it was grassy and wanted wear;
Though as for that, the passing there
Had worn them really about the same,

And both that morning equally lay
In leaves no step had trodden black.
Oh, I kept the first for another day!
Yet knowing how way leads on to way,
I doubted if I should ever come back.

I shall be telling this with a sigh
Somewhere ages and ages hence:
Two roads diverged in a wood, and I —
I took the one less traveled by,
And that has made all the difference.

— Robert Frost

    Minnesota statehood was established in the middle of the 19th century, followed by a detailed U.S. land survey resulting in the definition of county boundary lines. One by one, counties held elections and were declared organized by the Minnesota legislature.

The newly elected officials filled the roles of commissioner, sheriff, treasurer, coroner, recorder, and judge to conduct business on behalf of the recently established counties. The number of elected county officials and staff has risen and fallen over the years to meet the ever-changing needs and demands on local government, and the services provided by local government have evolved and grown over the past 150 years. Early elected officials protected property rights, kept the peace, collected taxes, investigated deaths, and tried court cases. While many of these early established services are provided today, a new array of services has been added to local government's responsibilities: roads and bridges, caring for youth and adults with mental health needs, caring for citizens who are down and out and in need of work or a place to live, attending to public health and safety demands, and the list goes on.

Changing demographics and economics along with an increased demand on local government to provide services are forcing local officials to reflect on and plan for the future of county government. In this paper I will be discussing the work of just such a group of local leaders. I will explore future trends in the state's economic condition and projected population trends, I will be considering the suggestions of experts in the area of change, strategic planning, and leadership development and how these ideas can assist leaders traveling down this road to meet the future, and I will be covering some of the successful projects that have been implemented in counties throughout the state, describing the work these leaders have been engaged in, including a newly formed collaborative group, The Big Three.

Minnesota counties, townships, cities, and school districts will not be walking into the future alone on The Road Not Taken. The Association of Minnesota Counties (AMC), with a membership consisting of county commissioners, took the first steps to form a collective group to walk into the future prepared. This group, formed in 2004, is named the Minnesota County Futures Task Force. Several factors led up to the formation of this task force, including the results of a study conducted by the Himle-Horner group to assess critical issues facing county government in Minnesota, the effects of the Minnesota 2003 budget shortfall, demographic changes in the state's population and outdated service delivery systems. The collective group of task force members does not formally represent groups of commissioners, recorders, county attorneys, or administrators. Instead, the members were asked to serve on the task force to bring their personal and professional experiences to encourage diversity of thought around county government. The Minnesota County

Futures Task Force held its first meeting in June of 2004 with an initial membership of 33 government officials and staff. A majority of the group were county commissioners, along with county administrators and coordinators, a social service director, a recorder, a public health director, an auditor-treasurer and a sheriff. Due to retirements, staffing changes and election outcomes, the makeup of the Futures Task Force changed in 2006 and is currently made up of 42 members with just a little over half of the members being county commissioners. The rest of the membership represents various departments, including Information Technology, Environmental Services, Public Health, Highway Department, Land Records, County Attorney, Solid Waste, Administration, Community Services, and Corrections.

The early work of the task force resulted in the development of a mission, purpose, and goals. The **mission** of this task force is to **"Discover and Promote Opportunities for Dynamic Change."**

The **purpose** of this group is three fold:

- **Envision** opportunities for change
- **Motivate** change agendas and agents
- **Monitor** change activities

The **goals** of the group are:

- **Create a Culture** that fosters positive change in county government and in communities.
- **Nurture Partnerships** among local governments and local government associations to promote effective and efficient service delivery systems for Minnesota communities.
- **Enhance Relationships** between counties and state agencies to improve service delivery and outcomes.

The Futures Task Force created a **Work Plan Map** (Figure 1) to determine the areas of focus for the group's future work efforts. The work plan map has three major focus areas including: **The Center for Excellence in Local Government, Initiatives and Special Projects, and Local Government Association, Collaboration and Cooperation**. The first focus area, Center for Excellence, is designed to identify easily accessible resources for county and local government officials; the second focus area, Initiatives and Special Projects, is planned to explore and disseminate research pertinent to county and local government; and the third focus area, Local Government Association, Collaboration and Cooperation, is
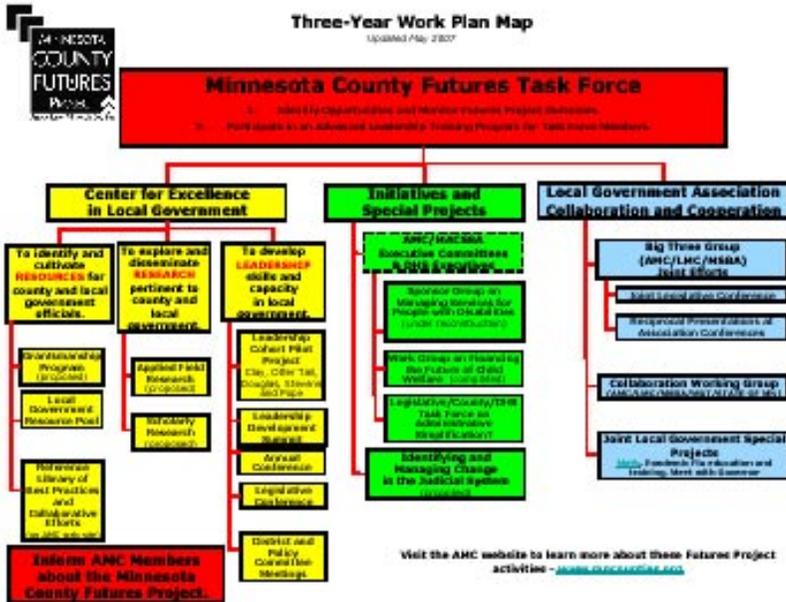
Figure 1: *Minnesota County Futures Task Force work plan.*

intended to develop leadership skills and to build capacity in local government.

Future Trends

Current Minnesota Economic Trends: To help the Futures Task Force members gain a better understanding of the current trends facing Minnesota, members have been studying the state's economic outlook and demographic makeup. According to a 2005 report prepared by Tom Stinson, State Economist, and Tom Gillaspy, State Demographer, Minnesota has been very successful with economic growth exceeding the national average, a population growth rate that exceeds the Frost Belt, and a ranking with the leaders on many social and economic indicators. But while Minnesota has experienced growth, we will be facing a bumpy road ahead with a population that is aging. The first of the baby boomers will turn 65 in 2011, and this growing age group will affect the demand for delivery of government services.

Another important factor for the Futures Task Force to consider is that Minnesota's work force is aging, including the government sector. Minnesota government has fewer young workers and more old workers than the private sector. In 2004, the percentage of
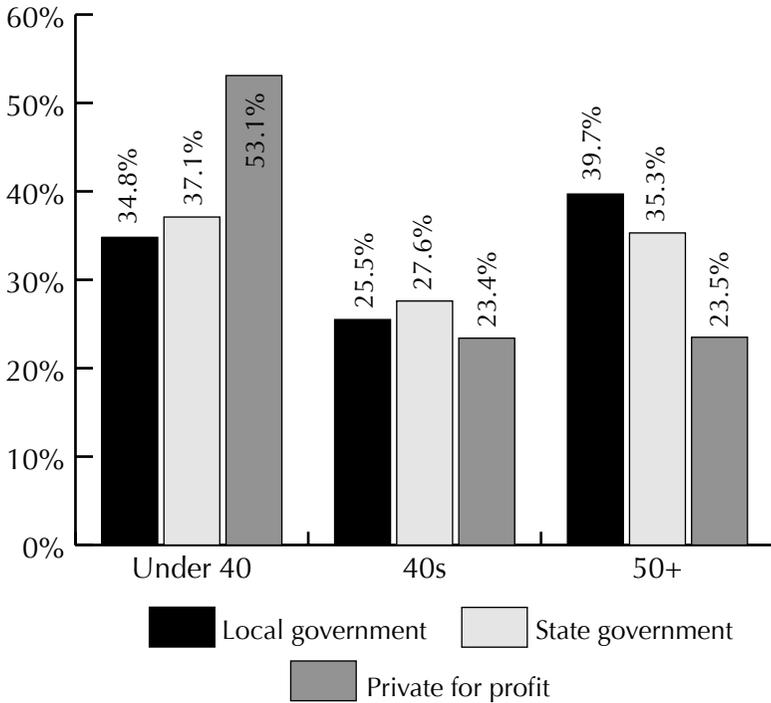
U.S. Census, 2004 American Community Survey

Figure 2: *Minnesota government has fewer young workers and more old workers than the private sector.*

people under 40 working in the private sector was 53.1, another 34.8% working in local government, and 37.1% working in state government positions. For the same time period, the percentage of people age 50 and over working in the private sector was 23.5%, 39.7% were working in local government, and 35.3% were working in state government positions.

The time is now for Minnesota leaders to consider what role the education system from K-12 and higher will play as state and local governments face staffing shortages. The traditional population mixes in schools are changing. Minnesota high school graduation ratios are changing with lower graduation rates among students of color.

Overall, health care costs having been rising annually resulting in an increased share of personal income. The current projection is

18% and the trend is projected to continue on the same path upward to over 20% of personal income. Medicaid spending is expected to double the current rate by 2013 and state revenues may not keep up with this expense.

The share of personal income that goes to state and local government has declined slightly over the last fifteen years. As the boomer population reaches retirement, less of their disposable income will go toward state government in the form of taxes.

The Futures Task Force members will need to pay attention to the changing economic trends while planning for the work force of tomorrow. The following insights should be considered in the planning process:

- Fewer younger Minnesotans are entering the government workforce.
- There is increasing competition with the private sector for government positions.
- Minnesota will need to consider attracting workers from outside of the state.
- Existing workers need to be retained.
- More emphasis needs to be placed on productivity.
- Health care costs will increase.
- Government priorities are shifting to issues of aging and health.
- The state tax base will be affected as the baby boomer population reaches retirement age.

Projected Minnesota Future Population: As recently as June of 2007, Martha McMurry of the Minnesota State Demographic Center, reporting on regional population trends in Minnesota, projected that the state's population will grow to 5,709,700 by 2015 and to 6,446,300 by 2035. The population trends will be due to a natural increase (more births than deaths) and by net in-migration (more people moving into the state than moving out). The Twin Cities suburbs and the Rochester and St. Cloud regions are projected to see substantial growth over the next 30 years. The north central Minnesota lakes area is also expected to have significant growth. Declining and slow growth is projected in much of western Minnesota and in the core counties of the Twin Cities.

The number of children under age 15 is projected to grow slightly over the next 25 years. There will be 9% more children in 2015 than there are now. School enrollments have been declining over the past few years, but the education administrators in many

Age	Value
0-4	41,800
5-9	60,400
10-14	41,600
15-19	27,900
20-24	14,900
25-29	48,700
30-34	44,500
35-39	2,200
40-44	-19,500
45-49	-7,700
50-54	45,700
55-59	61,900
60-64	115,000
65-69	161,400
70-74	198,000
75-79	174,000
80-84	124,500
85+	118,800

-20,000   24,000   68,000   112,000   156,000   200,000
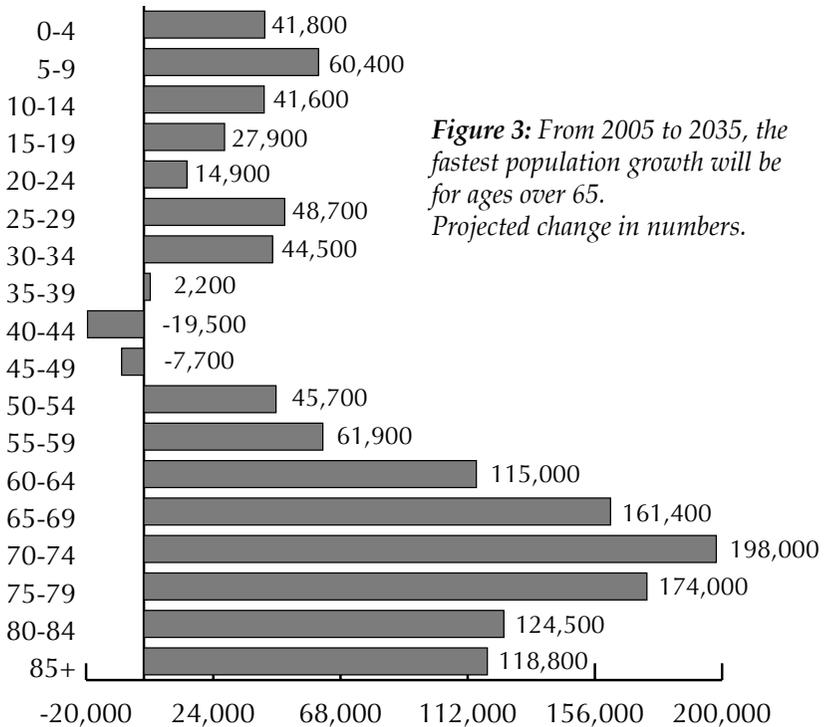
Figure 3: From 2005 to 2035, the fastest population growth will be for ages over 65. Projected change in numbers.

Minnesota State Demographic Center; numbers are rounded.

locations can plan for stabilization if not an increase in student populations. Most of the gain will be realized in the metro suburbs as these areas are attracting young families. The largest increases are projected to occur in Scott and Wright counties. The child population is expected to decline in Ramsey County and show little change in Hennepin County. A slow growth of the child population will mostly likely occur in the southwestern and northeastern regions of the state. After 2015, the statewide child population is projected to stabilize with variations. The child populations will continue to grow in the suburban areas, while many rural areas will show considerable declines.

The young adult age group between the ages of 15 and 24 will fall and then rise after 2015. The projections point to a 6% growth in young adults in 2035. The 25-to-44 age group is not projected to change much, estimated to grow only about 4% between 2005 and 2015 and then remain steady.

The number of Minnesotans between the ages of 45 and 64 is expected to grow by 19% in the next ten years. This age group will

account for almost half of the total population growth. The gains are expected to occur in Scott, Sherburne, Carver, Chisago, Wright, Hennepin, Dakota, and Anoka counties. After 2015, the baby boomers will be moving out of this age set and will be replaced by a smaller generation.

The number of baby boomers age 65 and over is expected to double between now and 2035, from 623,200 in 2005 to 1.4 million in 2035. In contrast, the population under age 65 will grow only 10%. More than half the population growth in the next 30 years will be attributable to gains in the older population. The age composition will change as the older age group grows faster than the younger age group. In 2005, roughly 12% of the population was 65 or older; this will increase to 14% by 2015, and by 2035 22% of the state's population will be 65 or older.

The largest gains in the elderly population are projected to take place in the metro counties of Hennepin, Dakota, Anoka, and Washington. Even though there will be a significant increase in the older population, the rural counties are expected to see a decline in the number of elderly due to out-migration.

This second report points to regions of the state that will be greatly impacted by a changing population mix. The projected trends in this report need to be shared with counties, cities, and schools. The projected population data should be carefully considered as organizations develop or update their visions and long-term strategies. Some regions in Minnesota have been losing population and will continue to, while other areas will be growing in population. The population growth mixes will not be identical, as the report points to some areas growing in a younger age group while others are predicted to grow in an older age group. These varying population trends will also mean varying needs and service delivery demands on local and state government and the school system. Those counties located in regions facing a decline in population will need to carefully evaluate the services provided and determine what service level will be acceptable and affordable. Counties located in regions that are expected to realize a growth in population will need to plan ahead to expand services at a rate that will be acceptable.

Waves of Change

The changes that are impacting Minnesota counties go beyond economic and population trends. There are changes occurring at a higher level and are best described in the writings of futurist Alvin Toffler. In his 1980 book *The Third Wave*, Toffler looks at the history of man and explains major social changes through "wave fronts."

Toffler marks the first major wave of change as the Agriculture Wave. Humans had been subsisting as hunters and gatherers, living in small migratory groups. As people began to grow crops, their lives changed. This first wave era began around 8000 B.C. and dominated the earth until around 1650 A.D. During this era much of the earth's population operated with land as the basis for the economy, life, culture, family structure, and even politics.

The second wave front began to roll in between 1650 and 1750 A.D. and is labeled the Industrial Wave, or Industrial Revolution. The industrial wave first began to take over England and then spread to the United States. Toffler explains that this wave moved much more rapidly across countries than the first wave. One of the primary principles of the Industrial Revolution is standardization. Not only were manufactured products standardized, but so were many other aspects of daily life. In business, pay scales, hiring practices, lunch hours, holidays, and even grievance procedures were standardized. Mass media disseminated standardized images so that millions of people read the same ads, heard the same news and the same short stories. School grading policies, admission procedures, and accreditation rules were standardized.

According to Toffler, the third wave began to roll into the United States in the 1950s with the introduction of the computer and other new technologies. Technology has changed people's daily routines, from reading the news on their laptops to checking their day's appointments on a handheld electronic device. Work has changed from building widgets on the factory floor to handling information all day long.

At the time Toffler wrote the book, the problems he saw for the future included a need for renewable energy sources and less reliance on fossil fuels, addressing the needs of students and school systems, taking better care of our environment, addressing the delivery of health care, and the delivery of government services. The Third Wave is rolling in with great gusto and the Futures Task Force is leading and learning how to meet this wave. Toffler suggests, "Our approach, in what follows, therefore, will be to look for those streams of change that are shaking our lives, to reveal the underground connections among them, not simply because each of these is important in itself, but because of the way these streams of change run together to form even larger, deeper, swifter rivers of change that, in turn, flow into something still larger: the Third Wave."

Changing economics and population makeup is going to force counties to develop new methods for delivery of services. Government has been riding the technology wave for some time

now, but as technology continues to evolve, so must government's utilization of it. Most counties have websites that are informational, but the counties' customers want to take their Internet business a step further. County customers want to be able to interact with the county websites and pay for services online, 24x7. Interactive websites may be just the mode of delivery to help counties that are losing population. These interactive websites could be developed jointly with several counties participating in the venture. The shared development of an interactive website should be more cost effective for the counties and an easier solution for the customer, especially if the customer conducts business in more than one county. The implementation and adaptation of technological advances will be a necessity in maintaining the vitality of the services provided by county government.

Revisit Reinventing Government

For centuries we were taught to worship our ancestors and to be true to our traditions, and it was good that we did so. But now, given the novelty and quantity of the challenges rushing at us from the future, we need to do something we have never had to do before, and which I fear we may not be able to do now: we must worship our descendents; we must love our grandchildren more than we love ourselves.

— Jim Dator, University of Hawaii futurist

Another resource the Futures Task Force needs to tap into is the work of David Osborne and Ted Gaebler. In 1992, Osborne and Gaebler wrote the book *Reinventing Government*, which suggests taking a new entrepreneurial approach to government. Osborne and Gaebler discuss the concept that government should be run like a business. However, as they point out, government and business are two different institutions. Government is motivated to provide services based on public demand and need and obtains money from taxpayers. Business is motivated by profit and obtains money from customers. Thus the public focuses on the cost of government services and tries to control how money is spent. All of this contributes to public sector employees looking at risks and rewards very differently than private-sector employees.

Government is democratic and open and moves slowly, whereas private-sector managers can make quick decisions and move nimbly behind closed doors to make a profit. Government must deliver services to everyone equally, often done on a sliding fee scale matching an individual's ability to pay. Therefore, government

cannot achieve the same delivery of services and financial efficiencies as the private sector.

However, government could consider Osborne and Gaebler's proposals for changing government: "We must turn bureaucratic institutions into entrepreneurial institutions, ready to kill off obsolete initiatives, willing to do more with less, eager to absorb new ideas." They go on to suggest we don't need more government or less government, we need better government. Another term they use is better governance, and they provide a definition for it. "Governance is the process by which we collectively solve our problems and meet our society's needs. Government is the instrument we use. This instrument is outdated, and the process of reinvention has begun."

Osborne and Gaebler describe many possible solutions to reinventing government. One strategy they suggest is anticipatory government, defined as two fundamental ideas: using an ounce of prevention rather than a pound of cure; and doing everything possible to build foresight into decision-making. A process suggested when conducting strategic planning as part of anticipatory government includes:

- Analysis of the situation, both internal and external.
- Diagnosis, or identification, of the key issues facing the organization.
- Definition of the organization's fundamental mission.
- Articulation of the organization's basic goals.
- Creation of a vision: what success looks like.
- Development of a strategy to realize the vision and goals.
- Development of a timetable for that strategy.
- Measurement and evaluation of results.

The anticipatory government concept suggests entrepreneurial governments consider changing budget systems, creating regional governments, and reforming the electoral system. It is suggested that budgeting projections be completed not for the current practice of one to two years, but rather five or ten years ahead. Budgeting for five to ten years ahead is not a 100-percent accurate process, since challenges that lie ahead as expenses and revenues drop or rise cannot always be predicted, but these financial projections can help policy makers evaluate new programs and the associated long-range budget implications. In discussing regional governments, Osborne and Gaebler cite Minnesota as an example of a true regional government model with the Metropolitan Council. The Minnesota legislature created the council and empowered this group to review

and suspend local government projects. The Met Council has worked through issues and solutions to solid waste, a regional park system, freeway routing, and mass transit. And in terms of reforming the electoral system, such reforms range from term limits to campaign finance reform to the formation and work of civic leadership coalitions.

Developing Leaders

We are in an unprecedented time of human choice. The most important work of leaders is to manage and place themselves. You must answer the questions: Who am I? What are my values? What am I good at? What do I need to learn? And Where do I fit?
— Peter Drucker, Drucker Foundation Conference

Reinventing government will require that a strong leadership base be developed in every region of the state. One of the Futures Task Force's programs is the Leadership Cohort Pilot Program, formed through the partnership efforts of AMC, the Blandin Foundation, and the University of Minnesota Extension Services. This leadership academy is designed to assist county personnel to further develop and expand their leadership skills and capacity. The first cohort program included four- to six-member teams from five counties participating in eight one-day classes throughout the fall of 2006 and the winter of 2007. The class topics included: The Business of County Government, Understanding Leadership, Visioning, Understanding Community Change, Stakeholder/Constituent Expectations of Government, Developing an Effective Leadership Support Network, Systems Thinking, Critical Thinking Skills to Successfully Address Complex Issues, Managing Conflict, Building and Sustaining Successful Teams/Managing Group Dynamics, Effective Facilitation, Public Participation Strategies, Effective Communication, and Moving from Vision to Action. The Leadership Cohort Pilot Program has been very successful and will be rolled out again during the 2007-2008 calendar year for several new county teams.

The Leadership Cohort Program will benefit counties as they move into the future, helping them shape a shared vision. Peter M. Senge said this on shared vision:[1] "A shared vision is not an idea. It is, rather, a force in people's hearts, a force of impressive power. It may be inspired by an idea, but once it goes further — if it is compelling enough to acquire the support of more than one person — then it is no longer an abstraction. People begin to see it as if it exists. Few, if any, forces in human affairs are as powerful as

shared vision." The vision or the goal that an organization and its employees are working toward is the glue that holds them together. When people have a shared vision, they are connected. A shared vision is a vision that people have accepted and are truly committed to. Many county employees have a strong, dedicated work ethic. Staff with a strong, dedicated work ethic and a shared vision make a powerful group of people. Counties and their communities need to be able to create shared visions as they move forward into the future. Visioning then plays an integral role in shaping the organizations' culture.

The cohort program will help counties to cultivate a healthier organizational culture among county leadership and personnel. Organizational culture can be defined as the customs and habits of a unified group of employees in a work environment affected at times by the perceptions, thoughts, and beliefs of the employees. Margaret Wheatley discusses her view on organizational culture by relating to fractals first discovered by Michael Barnsley in the "Chaos Game" [2]. A fractal is a type of repeating pattern first found in nature, such as the leaf of a fern and its repeating leaf pattern. Wheatley suggests that all organizations are fractal in nature, deeply patterned with self-similar behaviors evident everywhere. People in organizations exhibit similar behaviors at all staffing levels. She has observed tendencies recurring from secrecy to openness or from name-calling to thoughtfulness. These recurring patterns of behavior are the culture of the organization. Wheatley suggests as customers, we can detect how employees are treated by their managers by noticing how the employees treat us. Wheatley was trained to spot the dominant issues of a client by noticing how the client interacted with her. Organizations demonstrating a strong commitment to their values make good use of the fractal creation process. According to Wheatley, when observing the behavior of employees, one can tell what the organization values and how it chooses to work. You can see, hear, and feel the employees and the organization's values. These similarities are not achieved by standards and rules but through the simple principles all employees are accountable for in an atmosphere of freedom. Expressing expectations and allowing employees the freedom to implement them in their work form the culture of the organization.

Best Practices

A fundamental component of the Futures Task Force is sharing successful projects implemented in counties throughout the state.

Stearns County CJCC: Once such recent project shared with the task force was a presentation on the Stearns County Criminal Justice Coordinating Committee. Stearns County built a new jail facility in 1987 with a capacity of 90 beds. In 1997 the county added on to the jail, increasing the capacity to 148 beds, and by 2003 the capacity was increased to 167 jail beds by using double bunking. At this point their jail population was above what they could house in their current facility. Stearns County's Jail Facility Plan, created in 1995, projected in a worst-case scenario that the jail population would reach 159 by 2015. The County leaders turned to the National Institute of Corrections (NIC) in 2003 for assistance in handling the rising jail population problem.

By working with the NIC, Stearns County learned that while the county's population had increased by 18%, admissions to the jail were up by 127% and the average daily jail population was up 208%. In contrast NIC found that while crime was flat, arrests were down, and the crime-prone age group (18-24) was a smaller portion of the general population, the demand for jail beds was up dramatically. A key learning from the NIC experts was, "The demand for jail beds is much more heavily influenced by changes in justice policies and practices." NIC recommended that Stearns County form a Criminal Justice Coordinating Committee.

Stearns County leaders took the advice of NIC. The membership of the committee includes representation from the Sheriff's department, the Court System, County Attorney, County Public Health, County Administration, St. Cloud Police Department, County Community Corrections Department, St. Cloud City Attorney, and County Commissioners. Together this committee has changed the approaches taken toward sentencing and the overall jail population, including: better management of inmate classifications, a closer examination of sentencing options such as community service work through sentence to serve, the use of electronic monitoring that saves on days in jail, exploring options other than jail sanctions for probation violations, and decreasing time in the system by moving people through faster, which cuts back on jail time. The accomplishments and commitment of this committee have been recognized by NIC as a role model for other jurisdictions to follow.

Scott County SCALE: Scott County created a unique coalition of local government units to encourage greater efficiencies and leadership in public service. The coalition is the Scott County Association for Leadership and Efficiency (SCALE) and it promotes enhanced communication, collaboration of services, and sharing of

resources. The membership includes the mayors and administrators from cities within Scott County, school superintendents, township officers, representatives of the Mdewakanton Sioux Community, the county administrator and county board chair. SCALE members meet monthly to discuss ways in which local governments already are collaborating, covering programs in law enforcement and public safety, parks and recreation, transportation, community development and general government.

The group has been discussing the development of a public safety training facility, policies for capital equipment sharing, joint purchasing, and countywide employee training. The Association has been very advantageous to the community as public officials work cooperatively to deliver services with limited revenues due to reductions in state aid and a slow economy.

Task Force Work

The Big Three Group: The executive directors from the League of Minnesota Cities and the Minnesota School Board Association have participated in panel discussions for the Futures Task Force. The presentations have led to a deeper understanding of the issues and challenges facing the three organizations — cities, schools, and counties — and has resulted in the formation of a working group known as The Big Three Group. The membership of this Big Three Group is comprised of executive staff and board members from the League, the School Board, and the County associations. The Big Three Group meets on a regular basis and discusses current issues and challenges facing the larger membership as a whole.

The group has received information on the Blandin Broadband initiative and was encouraged to support public and private investments in building rural broadband capacity. Blandin asked the Big Three Group to help provide venues to educate people on broadband and its impact. The Big Three Group will also be assisting community leaders in the creation of a common vision and response to a possible pandemic flu incident in their communities.

The Big Three Group has also collaborated on Legislative issues and continues to work on this effort as a team. Their efforts resulted in the first ever Joint Legislative Conference, held in late March of 2007 for the entire membership of Minnesota Cities, School Boards, and Counties associations. The conference was well received by the three organizations' members and attendance was outstanding. The conference attendees not only learned about the legislative issues facing them, but they then had an opportunity to meet with their local legislators one on one to discuss these issues. The Big Three

Group is now working on plans for next year's joint legislative conference. The Big Three Group is committed to improving the working relationships between the legislators and their membership.

The Big Three Group is also considering the formation of a joint member task force that could explore ways to share and collaborate with one another. Examples of collaborative efforts could be sharing staff and resources, sharing I.T. staff, computers, and human resource functions.

DHS Initiative: One of the goals of the Minnesota Futures Task Force is to enhance relationships between counties and state agencies to improve service delivery and outcomes. The Managing Change Task Force was formed to serve as a leadership group on managing change in the Department of Human Services (DHS) system. The task force was convened at the invitation of the Commissioner of Human Services and included members representing DHS, county commissioners, county human services directors, and county administration, meeting from June of 2005 through April of 2006. The work of this task force resulted indirectly or directly in the following initiatives:

- Minnesota Association of Social Service Administrators (MACSSA) Future of Human Services white paper and AMC principles language around human services
- Formation of a Child Welfare (child safety and protection) Task Force and subsequent report and legislative language
- Formation of a DHS County Disabilities Sponsor Group
- Development of a DHS work plan
- Minnesota Association of Social Service Administrators (MACSSA) Center for Excellence Proposal

Due to changes in leadership, the Managing Change Task Force has been discontinued, but the dialogue on human services issues needs to continue between the counties and DHS. Goals need to be clarified by DHS for the state and for the counties, and a focus needs to be directed toward the consumer and the communities that support them.

Living Laboratory: A recent suggestion that was generated from the Futures Task Force was to create a "Living Laboratory." In this plan, the Task Force would approach the University of Minnesota's Social Sciences department to engage in a collaborative research project, which would involve students and staff assisting a pilot county in

the development of a new model for a particular service delivery. With the county acting as a test environment, students, professors and staff would collect and analyze data and information to assist in improving upon the model. This real-time living laboratory would support counties in developing innovative service delivery models without having to reinvent the wheel. Successful projects would be rolled out to counties with a blueprint to follow as the model is replicated.

Conclusion

The leaders of Minnesota counties cannot turn their backs on the future and continue to conduct business as they have over the past 150 years. The experts in our state have projected major economic and population shifts in the very near future. Our entire state is riding the Third Wave of technology, and the time has come to reinvent government in Minnesota. Counties currently operate within boundary lines that were surveyed and laid out in 1858. Leadership is needed to create a safe environment that will be conducive to change.

The Minnesota Futures Task Force is a collective group of county leaders providing the direction needed to assist communities as they walk into the future. This walk into the future will be accomplished as communities consisting of counties, cities, and schools join together and create a shared vision. The next step may involve working with state agencies, legislators, and the Governor to pass legislation or change existing laws to make the visions possible. Then the visions will need to be communicated, tested, evaluated, and implemented. When a vision is successfully implemented, it should be celebrated and shared with other entities trying to reach the same or similar vision. If a vision doesn't work out, then the lessons learned also need to be shared with local governments.

Counties, cities, and schools need to ride the Technology Wave to assist their organizations to improve service delivery to their constituents. These groups need to form partnerships with one another and with the private sector to implement technology solutions that will meet their constituents' needs. The use of technology will be a means to assist counties, cities, and schools reach their visions.

In the book *Results Based Leadership* by Ulrich, Zenger, and Smallwood, concepts are identified that organizations should consider when working toward a vision:

- Leaders should emphasize the future and not dwell on the past.
- Look at the possibilities and not the constraints.
- Reach customers outside through the employees inside.
- Encourage risk taking and discourage political protecting.
- Reward collective, not individual, successes, but maintain individual accountabilities and keep heroes visible.
- Look for alternatives before seeking closure.
- Ensure a high level of personal freedom and trust.
- Encourage debate before consensus.

County commissioners and staff must participate in the Leadership Cohort Program. This program will help county leaders build leadership capacity and cultivate a healthier organizational culture that is vital as leaders and their employees meet the future. County leadership doesn't just happen, it must be developed through a process such as the one provided by the Leadership Cohort Program. When leaders develop a good strong base in leadership skills, critical thinking, team building, and visioning, they are better prepared to adapt to an ever-changing environment. The future of local government is dependent on excellent leadership skills and the ability to develop and implement strategic plans.

The local leaders of today and tomorrow must be willing to develop shared visions as they weigh in on the plans for the future of our communities. Counties, townships, cities, and school districts must cooperate and collaborate as they face future changes and demands. Local leaders will need to expand beyond the current boundaries and not limit their thinking to the way it has always been done. This group will need to take a few risks as they try innovative solutions to meet the needs of customers and local citizens. Local leaders and personnel will be able to look to the Minnesota County Futures Task Force for assistance as they transition together into the future. The work of planning for the future of Minnesota has been set into motion so that none of these organizations should be unprepared and take the path less traveled.

For nothing will remain the unchanged. The future is fluid, not frozen. It is constructed by our shifting and changing, daily decisions, and each event influences all others.
— *Toffler*

References

Association of Minnesota Counties. (2007). Minnesota County Futures Task Force. Retrieved June 30, 2007 from http://www.mncounties.org/Special_Projects/Futures.

Frost, R. (1969). *The poetry of Robert Frost*. New York: Henry Holt and Company.

Gaebler T., Osborne D. (1992). *Reinventing government*. Massachusetts: Addison-Wesley Publishing Inc.

Minnesota Department of Administration. (2007) . Minnesota population projections 2005 – 2035. Retrieved July 10, 2007 from http://www.demography.state.mn.us/documents/Minnesota PopulationProjections20052035.pdf

Senge, P.M. (1994). *The fifth discipline: the art and practice of the learning organization*. New York: Doubleday.

Toffler, A. (1980). *The third wave*. New York: William Morrow and Company Inc.

Wheatley, M. (1999). *Leadership and the new science: discovering order in a chaotic world.* (2nd ed.) California: Berret-Koehler Publishers Inc.

Unger D., Zenger J., Smallwood N. (1991). *Results based leadership*. Massachusetts: Harvard Business School Press.

Endnotes
[1] Summarized from *The Fifth Discipline* by Peter M. Senge.
[2] Summarized from *Leadership and the New Science* by Margaret J. Wheately

The Rural Education Dilemma
Joe Graba

Public education in America is facing tremendous challenges. Rising expectations that public education has been unable to meet — along with serious difficulty in obtaining sufficient funding levels — are causing growing concern among the thought leaders in education policy in our state and in the country. Public education faces a serious dilemma. It is facing rising expectations that require it to make every child a successful learner. But it's trapped using a model of schooling that was given its basic design in the 19th century.

These challenges are particularly difficult in the rural parts of our state and country where district enrollments — and the funding they generate — are often small and continue to decline. While all districts in our state and nation are experiencing serious pressure to improve, rural districts have the added issues of dealing with shrinking size and the realities of time and distance in serving students across a larger geographic area. These trends seem likely to continue into the future and bring along with them the need to further consolidate many of our smaller school districts.

This is almost certainly true if we insist on staying with our traditional design for school and schooling processes. The good news is that there is now the possibility, perhaps even the inevitability, of developing new school designs and different processes for learning. This paper will discuss the need for these new and different approaches, the hurdles we face in developing and implementing these innovations, what some of these schools might be like and some ideas about a strategy to get from where we are to where we need to be. While this paper is being written about these issues in a rural setting, the need for different designs for school and different schooling processes is not limited to rural schools but is needed across public education in all areas of our country.

I want to say at the outset that while I am going to make some frank statements about public education, I do so with a fondness

and respect for the public education enterprise. I started my working career as a science teacher in Wadena, MN, a small rural community. I was also a state-level union leader during my teaching years. I represented many small school districts during my six years in the Minnesota House of Representatives. During four of those years I was chairman of the Education Finance Committee, the committee that writes the funding legislation for all of the districts in the state. I also had the opportunity to serve as deputy commissioner for K-12 education for Minnesota. And I finished my formal career as Dean of the Graduate School of Education at Hamline University, overseeing the continuing development of many of our current teachers.

U.S. lacks serious program for K-12 innovation

While I have a lot of respect for public education and its contribution to our society, I do think we need to be honest about the learning challenges we face today and the need to make major changes in order to meet these challenges. The kinds of schools and schooling processes that served our country so well through most of the 20th century will not meet our new and escalating learning needs of the 21st century.

Our country lacks a serious program of innovation, of research and development, for its system of public education. The dominant notion today in our education policy is to simply carry forward the traditional and conventional notions of education, of performance and progress and of school design and schooling — making these if possible "more rigorous."

We know that our learning needs are escalating in this new century, but our current policies assume that we can get the learning we need from the schools we have. This "one bet" approach to achieving the much-needed improvements in public education is a serious risk. It is an unnecessary risk now that other approaches to learning are possible. There is no question that we need to continue to improve our current schools in every way feasible. But this country needs an expanded effort to create new and different schools — schools that are different in fundamental ways from the schools we used in the 20th century.

Challenges in fundamentally changing school/ing

It is important to point out that we have radically changed our expectations for our public education system in the past 15 years or so. Sometime in the early 1990s we started insisting that our schools help every student to become a successful learner. A lot of people are surprised to learn that we had never expected our public education system to do this before.

Paul Houston, the head of the national organization of school superintendents explains this change quite well. Paul says that through most of the 20th century the expectation of public education was to provide universal access to quality education. Many of the initiatives of the last century were to expand this access. In the early years of the century, high school opportunities were greatly expanded.

Then education was made mandatory up through age 15 in most states. In the last quarter of the century special education services for our children with handicapping conditions were required. Then in the last decade of the century we switched the expectation from universal access to universal achievement. The public generally doesn't understand how radical a change this is for public education. It is largely this change that has led to our reform efforts of the past decades.

Almost every serious educator agrees with these new and escalated expectations for learning. But it is important to recognize that the system has never done what is now being asked of it. The current system was in fact not designed with these expectations in mind. It is also important to point out that the system has never come close to realizing this new level of performance.

It is probably fair to say that the system today serves only about 60% of our students reasonably well. In other words, about 40% of the students are not successful learners in the current schools of America. Approximately 30% percent of our students never complete high school and there is a sizable number that stay in school but are clearly not successful learners. This percentage varies from district to district and from state to state, and the specific percentage is not the point, but it is obvious that huge numbers of our students do not do very well with our current approaches to schooling.

We have been making a massive effort to improve our schools over at least the last 25 years and almost nobody is satisfied with the progress we have made. Almost all of this effort has been directed at trying to improve the schools we have on the assumption that we can get the kind of learning we now need by improving the schools we have.

Considering our record over this past quarter century of reform effort, we now need to accept that we have not just a performance problem but also a design problem. We need now to undertake a major effort at creating many schools that are different in fundamental ways from the schools we used during the 20th century.

A second reason for improving our schools has recently been in the news and educational policy discussions. This new set of issues

has to do with the growing concerns about America's ability to compete in the increasingly global economy. Much of this concern is directed at the so-called STEM areas — science-technology-engineering & mathematics.

With other countries that are much larger than ours — mainly India & China — now making major strides in developing graduates that have degrees in these areas, there is growing concern about how we attract larger numbers of our students to these fields and also how we increase the creativity of those who do graduate in these fields.

While the 40% problem focuses us on how to help those who have never done well in our schools, this set of concerns points us to the other end of the learner spectrum and raises concerns about what we do to sustain our traditional leadership position as a major innovator of new technology products and services in the global economy.

Third, there seems to be good reason to question whether the traditional model of school and schooling will be sustainable economically. We need to be realistic about current trends. While there is very little formal research about this issue, we do know that labor-intensive organizations have inherent inflation rates that run significantly above our usual measure of inflation, the Consumer Price Index. This creates spending patterns that are difficult for our elected officials to fund. Those closest to the operating system are conscious of the difficulty of raising revenues enough to maintain the existing program.

Given the demographic trends in our country and their projected economic impact, the risk is that programs will be reduced while at the same time taxes rise, so that both educators and policymakers will be caught in an unending annual cycle of doing less for more. It is unclear whether even strenuous efforts to secure "adequate" financing can keep up.

We need to ask ourselves whether a continuing reduction in program levels is tolerable and whether even the present rate of revenue increase can be sustained. And we need to ask whether, even if additional revenues could be found, whether they would be applied in ways that improve the effectiveness of what teachers and students do together.

Though ways do exist to arrange the learning exercise to use resources more productively — and which we could introduce into the improvement strategy if we wished — there is currently no serious productivity agenda visible for K-12 — and almost no serious discussion about its absence.

This issue of sustainability is, of course, even more challenging in our

rural areas where we continue to see widespread decreases in enrollment.
It is because of all of these reasons and more that we need a serious effort
in this country to create new and different approaches to schooling. But
first we need to understand the realities we face in this effort to change our
approach to schooling.

Old notions of schooling suppress innovation

Despite this need to think and act differently, new forms of school and schooling find themselves blocked at almost every turn. Partly this is simple resistance to change, reinforced by the influence of the interests invested in the status quo. But very largely it is because of the power of the old notions.

It is important to understand that this resistance to changing schooling comes not just from those involved in our public education system. It involves most of us in the broader society. We can all support the need to make our schools better but we want that to happen without making our schools different. All of us have experienced school and we carry in our heads a picture of what school is.

In this picture, school is a place. And it's not a separate, autonomous organization making its own decisions, but part of a larger organization. Decisions are made outside the school, for it. Teachers are employees of that larger organization. In the school, teachers have neither the authority nor the responsibility for the learning. The school is run by a principal who is both its administrator and its professional (instructional) leader. The teachers work for the principal.

In high school, knowledge is divided into subjects, subjects are organized into courses and courses are organized as classes. In a class there will be perhaps 20 to 30 students all moving through the material at the same pace, with students moving from teacher to teacher from hour to hour, a teacher seeing perhaps 150 students a day. "Batch processing." In metropolitan areas the schools can have from 1,000 to 5,000 students, in three or four grades, defined mainly by age.

Learning is seen as something that adults do to young people. It is quite common to hear people talk about schools "delivering education." Adults decide what students should know. The idea is to cover the material of the subject. Mostly teachers talk and students listen — or at least they're supposed to listen. The idea is to impart knowledge. And, of course, we assume that tests will measure how well students retain knowledge — at least long enough to do well on the tests. Both school and student success is defined as producing

high scores on tests.

There is great resistance to changing this traditional model of schooling. The old notions have a powerful hold on the public and on the media, as well as on the formal organization of districts and schools. The public carries in its head a picture of school as a classroom with kids in seats, a teacher in front talking or writing on the board. (Look at the way most articles and book-covers about school are still illustrated!) The effort is to make this model better without it becoming different. People become uncomfortable when they do not see "real school."

Finally, there is the power of nostalgia, the romantic affection for the schools we all remember. Most of those most influential in the education policy discussion are people who themselves did well in conventional school. Our children also probably did well using this model. And most of the people we know did well.

So, we are bound to feel that traditional school must be OK. If it doesn't work for some kids perhaps there is something wrong with them. So even those concerned about or critical of contemporary high school have difficulty imagining an alternative. Some of those most emphatic about high school being "obsolete" propose simply that it become "harder."

All this deference to the traditional model suppresses the effort to do school and schooling differently. New schools are judged by the standards of the old. Is this "real school"? Do the students cover the material? Are the teachers trained in their subjects? Do the children spend the required time in their seats? How high are the scores on tests? By these standards it is difficult to support the creation of new schools that depart from the givens of "real school," that are innovative, that think in terms of learning and of individual students.

The new and different models, in other words, might accomplish something new and different. But they are likely to be judged by the old standard. Some new schools might be making better progress with student learning. But "progress" is not the measure. The measure is the pass-rate, the test-scores in absolute terms.

Old notions also dominate the discussion about how change and improvement occur. The conventional notion is that because only "improvement" is required, the country can get the better schools it needs by changing the schools it has. The assumption is that the problems of the future can be addressed with the organizations and the processes of the past, only done better.

Recent research in our private sector shows that fundamental change, the kind of change we think is necessary, usually comes

from new organizations. But there is great resistance in our society to creating new and different schools that compete with our traditional schools for students and resources. The conventional prescription is to increase "professional development" for teachers, to develop better principals and to give them greater authority, for the state to provide "adequate" financing, and to insist that schools do "what works."

A disinterest in innovation is visible even in some of those involved with "school reform." Chartering was not a school-level innovation. It was an innovation at the system level, opening the way for groups of teachers and parents to start and operate new public schools.

Part of the intent for this system innovation was to encourage the creation of different models of school and schooling. But many, perhaps even most of the new schools created in this new sector are fairly conventional schools. Some intelligent and influential people like the ability to run schools outside the district structures but have no interest whatever in fundamentally changing what goes on inside the schools. Others, intimidated by the prevailing orthodoxy, are trying hard to make sure all chartered schools are "quality" by the standards of conventional schools.

Conventional thinking — again, even in the reform community — dismisses the importance of operators trying new approaches. Even when single cases of significant innovation appear, they are little noticed: Researchers, looking for trends and aggregates, are not impressed by particular variations even though these might represent the breakthrough we are looking for and need.

This is a serious shortcoming of our current approach to research. After the Wright brothers' successful flight our current approach to research would still have reported that the preponderance of evidence shows that most heavier-than-air craft cannot fly.

Compelling Realities Demand New Models

Several of today's realities converge to require and to enable new and very different models of school and schooling.

One: Learning and teaching are voluntary acts. We cannot force young people to learn well. Schooling will need to be rebuilt to motivate students, understanding that motivation is individual.

Nor can we make adults teach well: To command states to have only highly-qualified teachers will not cause such teachers to appear in the schools where they are needed. Everything we

do with financing and management and accountability will go for naught unless the teachers and the students are interested in and are committed to learning.

It is critical in any enterprise to motivate the workers on the job. In education the key workers are the students and the teachers. We should arrange schooling to elicit what Daniel Yankelovich calls "discretionary effort", that extra effort that workers can always make and would make if they were highly motivated to do so.

At the moment high school is arranged almost to suppress motivation. The rigidity of courses and classes blocks students from pursuing their individual interests and also from varying their pace of learning. The assignment of "professional issues" to management largely removes any sense of professional control, which discourages teachers' initiative and often impedes those teachers who do try something new and different.

This has consequences. We cannot take it for granted that we will have an adequate supply of quality teachers. Something in the current arrangement clearly makes teaching unattractive for far too many good people. Even some of the better-performing states lose half their new teachers in the first five years, and there are particular shortages in areas like math and science.

We also can't assume that, under present arrangements, students will be sufficiently motivated to learn. Lectures about the importance of studying hard are lost on many adolescents, who have almost no influence on the conditions under which they are asked to work harder and learn at higher levels.

Two: The information technologies have and still are transforming almost every aspect of our lives. These technologies radically changed rural life during the past 60 years. The telephone, radio, television and now the Internet have all leveled the distinctions between growing up in a rural setting compared to more urban settings.

As a youngster growing up on a dairy farm in Wadena County, I had almost no contact with the "outside" world except through the newspapers, an occasional movie and a local radio station that was available only when we had a battery for the radio. Communication with the "outside" world was very limited. My children and especially my grandchildren find it almost impossible to believe that my family heard about the end of WWII through word of mouth. Later, as a young science teacher in Wadena, I would turn off the lights in my classroom and try to simulate an eclipse of the moon using a basketball, a volleyball and a softball along with a strong

light to cast a shadow similar to an eclipse.

Today, information technologies continue to transform nearly every aspect of our lives. And, while our good teachers find ways to use many new products and services in their classrooms, these technologies have had relatively little impact on school design and our learning processes. It is astonishing that our society has allowed this to occur.

The potential for personalizing the learning processes using recent developments in digital electronics (and by the skills of young people with this technology) makes it possible to generate a model of school more likely to produce the motivation on which excellence depends. For a sense of the rate of change that is occurring in these technologies, consider this from the 2007 report of the Information Technology & Innovation Foundation:

- The computing power of a chip has doubled every 18 months for 40 years. Moore's Law continues to hold.
- The price of processing power has fallen steadily: $480 per MIP (million instructions per second) for the Intel 086 in 1978; $50 per MIP for the Intel 386 in 1985; $4 per MIP for the Pentium Pro in 1995; $2 per MIP for the Itanium 2 in 2003.
- The real price of servers fell about 30% *per year* between 1996 and 2001.
- Hard-drive storage capacity has doubled every 19 months and the cost of a stored megabyte of data has fallen 50% *per year*. So the cost of storing one megabyte of information fell dramatically. It was $5,257 in 1975, 17 cents in 1999, half a cent in 2002 and 1/10th of a cent in 2007.
- There are today about 100 million websites, all adding content and becoming more user-friendly all the time.

Traditional schooling was designed for an era in which students could not access information directly and had to be taught by adults who knew what the students did not. This era is ending. The new technologies imply a shift from the old paradigm of schooling as teachers instructing to a new paradigm of students learning, assisted by teachers.

We should expect these technologies to have implications and applications for schooling as profound as they have had for other areas of modern life, private and public. That's why it is astonishing that in the K-12 institution, and in our policy discussion about improvement, there is so little thinking about the potential of these technologies, so little interest in uses beyond supporting

administration and replacing the textbook, and so little inclination to see as an asset the capacity of young people with these technologies.

It's inevitable that these technologies will greatly change the way schooling is conducted in terms of the learning program. But they also make different kinds of school governance possible and probably necessary.

Three: As discussed earlier, the risk is real that the traditional model of school and schooling will not be sustainable economically. Those working every day in the existing system are conscious how hard it is to raise revenues even to maintain the existing program. Education depends on appropriations and on tax increases voted politically. As our population ages, public education will have to compete for resources against public programs financed as entitlements and against private programs that simply send their bill to the American economy for payment.

Four: The chartering laws in many states, including Minnesota, open the opportunity for more people to participate in the innovative process we envision. When systemic reform was first started in the early 1990s there was no thought that a new-schools sector might be available. So the strategy continued as an effort to improve existing schools.

But now the states' chartering laws provide a "new organizational space" open to innovation. Forty states have some kind of "open" sector. Most of these are gradually, steadily, improving. Some very interesting and potentially significant models are emerging in this "open" sector.

How Might School and Schooling Be Different?

The need and the potential for innovation will cause people to ask about the nature of the "different" possible models of school and schooling. We cannot know in advance what different models of school and schooling will appear as educators and others begin to innovate. We do know we will be talking about more than incremental changes in the traditional model.

We can sense the potential by contrasting the new paradigm with the old.

Some important innovations have appeared in the chartered-schools sector of public education even in the short time since these laws were enacted and despite the resistance to nontraditional models. There are innovations both in the organization of school and in the process of schooling.

The Past	The Future
Transform existing schools	Create new schools
Larger schools	Smaller schools
"Delivering education"	Students learning
Read books; listen to talk	Explore the Web
Time-bound/place-bound	Any time/any place
Technology as textbook	Technology for research
Groups, classes	Individualized
Time is fixed	Time is variable
Standardization	Customization
Cover material	Understand key ideas
Who and What	Why and How
Know things	Apply knowledge
Rigor	Relevance
Multiple-choice tests	Written/oral demonstrations
Testing for accountability	Testing for diagnosis
"Make 'em"	"Motivate 'em"
Instructors	Learning Advisers
Teachers serve administrators	Administrators serve teachers
Administrative management	Professional partnership
Adult interests dominate	Student interests dominate

Perhaps most conspicuous is a reduction in the size of school, especially high school. We now see economically and educationally successful secondary schools that operate at very small scale — between 120 and 180 students in grades 9-12 or even 7-12. Several such secondary schools operate in our state where the students do almost all of their learning around the projects they undertake. Project-based learning radically changes what both teachers and students do and also has major impact on the economics of these schools.

There is also the online or "virtual" school, a model now growing rapidly. And other innovations are less well known, partly because research has tended to ignore individual cases, preferring to generalize about aggregates and trends. But we can now see some of the elements that are beginning to change in several important ways:

- *Time* — A school does not have to be a place where kids come on a fixed schedule. Innovative schools are already testing flexible schedules.

- *Scope* — Some new schools are breaking the "K to 12" framework. We see some that bridge "age 3 to grade 3" with a continuous, coherent literacy program. And we see high school students now overlapping their junior and senior years with the first two years of college. Both of these developments need to be expanded.

- *Place* — School does not have to be a fixed place. There are interesting combinations of learning in school, at home, online and on projects out in the community. Some schooling might be work-based, with students earning both real money and real academic credit for what they do and what they learn.

- *Courses and classes* — Schooling can offer an alternative to studying subjects. Students might study civics and physics and art as integrated aspects of a real-life project rather than as separated, abstract disciplines. In some innovative schools the object might be to convey a dozen or so essential ideas of a field rather than to "cover the material" embodied in a full course in the traditional way.

- *Achievement and assessment* — Innovative schooling will likely challenge the old notion of success as the recall of factual material. The assumption today is that the economy needs, and business wants, traditional schooling made more rigorous. But this might not be so. It might be important to have also the schooling contemplated initially by systemic reform, that wanted young people to analyze problems critically, to think creatively, to communicate effectively and to work successfully with others. It is always good to test conventional wisdom, which tends to suppress innovation. If we had insisted in 1958 that all radios meet the prevailing standard — high-quality sound and well-made cabinetry — we might not have seen the transistor radio, which quickly and decisively demonstrated a different and important new quality: portability.

- *Pace* — Where work is individualized we might see schools that let students "test out" of subjects when they can demonstrate through some appropriate assessment that they know and can do what the standards say they should know and be able to do. They would not have to finish the course, perhaps not even have to take the course.

Many of these varying features will make it possible to customize the learning experience that our students have. There is solid research that students' learning styles vary in numerous significant ways and one of the serious shortcomings of our current model is the "one size fits all" feature. This approach was necessary back when our school system was designed, but it is no longer necessary.

Our traditional model of secondary school was actually designed around teaching. This was legitimate at a time when teachers carried in their heads and in the textbook the necessary information that the students needed to learn. The system has always assumed that a student couldn't learn the material unless he/she had taken a course taught by a qualified teacher. With the digital technologies of today, especially through the Internet, there are almost endless sources of information other than the teachers. This makes it possible to design schooling around learning rather than around teaching.

Organizing schooling around learning makes it possible to provide great variation in the learning experience. But it also makes it possible to greatly alter what teachers do. Teachers no longer need to stand in front of the class talking about information only they have. Teachers can move from being the source of the knowledge they want students to learn to being learning advisors for the students, helping them to acquire the knowledge from other sources.

It is this change that allows the flexibility that can lead to the customized learning discussed above. Students get to move at different rates. They can spend more time on areas that interest them, etc. The students need not be always present in a particular facility, "school." Moving the teacher from the talker at the front of the room also helps to change the relationship with the students. Moving the teacher to the "advisor" role opens up the opportunity for better, more personalized relationships between the student and the teacher.

This is particularly beneficial to the "at-risk" children, those in most need of strong relationships with adults. The flexibility also increases the opportunities for the highly motivated student who wants to move through the material faster or who wants to spend more effort going deeper into an area of special interest. Many variations on this are possible, but this outline greatly alters what both teachers and students do in the learning program. The digital technologies make this kind of change possible but they also provide opportunities to change the governance of education.

Our schools and school districts were organized at a time when most of the funding for the schools came from the property taxes paid by property owners in the district. This was also a time

when transportation required that the schools be designed for all of the children in the immediate area. This organizational approach necessarily led to what might be thought of as a vertical organization of schooling. All of the students in the district were limited to attending the schools created and operated by the district. It was largely these conditions that led to the "one size fits all" approach to schooling. These conditions have changed significantly in recent years.

Particularly in Minnesota, the bulk of the funding is now collected by the state government and then sent out to follow the students wherever they and their parents decide they will attend. Students are no longer required to attend the schools of the district where they live but can attend any district's schools or can attend chartered schools, and the money intended for their education will follow them. Chartered schools, for the most part, have no geographic boundaries but can attract students from a variety of districts.

These developments open up the opportunity for schools to be organized more flatly, in other words to reach across extended distances and design learning environments for certain kinds of learners rather than for all learners in a specific area. This is somewhat true of chartered schools in general, but it is particularly true of the online schools that are proliferating across our country.

New models of school and schooling

The online schools are probably among the more interesting examples of the use of the digital technologies for learning at the secondary level. It is estimated that across the country about 700,000 students did part of their learning from online schools during the 2005-2006 school year, and this number is growing rapidly. There are many online schools operating now in the United States. Several states have created state-owned and operated online schools. Most of these schools simply take the traditional courses and distribute them over the Internet. Most of the students take these courses not as their full-time educational experience but a course or two as supplements to their enrollment in a more traditional school.

Even though this approach seems to be fairly traditional, many of these schools are able to build in significant variation to meet individual student needs. Most obvious, of course, is that the place varies, but so can the pace. Many online schools let the students move at their own pace, which lets some take longer and others move more quickly. Many of these schools use a blended format with face-to-face opportunities as well as the online feature. A chartered

school in Minnesota, Cyber Village Academy, has the students meet at the school two days a week and then work online but with teacher interaction the rest of the time.

Other forms of schooling have also been greatly assisted by these new technologies. Several chartered schools in Minnesota have no courses at all. Probably the best-known school of this type is Minnesota New Country School in Henderson. In these schools the students do all of their learning around the projects that they do with the oversight of their advisors (teachers). The learning of the various subject areas is built into the projects. Using the real world in which they live and the almost limitless resources available through the Internet and in the broader community, they are able to complete some fairly complex projects.

The project-based learning model completely alters the economics of the school. This school is a grade 6-12 secondary school and usually enrolls about 125 students each year; it is largely because of the project-based learning model that this school is able to operate at this size. Two years ago this fall the first online project school was started.

Minnesota New Country is interesting also in its governance structure. Minnesota New Country is a school that is run by a teachers' professional practice. There are no administrators. The teachers formed a legal entity under the workers cooperative laws of the state. This entity (called EdVisions) then contracts with the board of the charter school to design and run the school. The teachers collectively have the responsibility for the school and through the contract with the board they also have the authority to run the school.

This creates quite a change in the culture of the school and of course it also eliminates some of the overhead that is common in administrator-led schools. The Bill and Melinda Gates Foundation has provided about $9 million in grants to replicate this school. There are now several such schools in Minnesota, as well as others around the country. There will be about 10 such schools operating in Milwaukee in the fall of 2007.

It is important not to get too captured by the specific models that have been created to date. Many of these are quite exciting and it would be fine to replicate them, but we believe our country needs to undergo an extended period of innovation in school/schooling design. We simply can't envision what new approaches might develop if we were to create an atmosphere that encouraged the type of innovation we think is necessary.

To go back to the compelling issues discussed above, we believe

that schools designed for more customization of learning for the students and provide more professional control for the teachers will help to increase motivation for the two key sets of workers in the learning activity. Making maximum use of the new digital technologies makes different kinds of school organization and different learning programs possible. These different approaches also have the potential to improve the productivity of the learning process.

It is important for our educational leaders and our policy makers as well as other opinion leaders to understand that this kind of exploration is needed. This will necessitate investment of public dollars and it will also require that we learn to accept failure of some of the models that are tried. We can't have true innovation without experiencing some failure. Starting and operating these new and different schools will also have an impact on our existing schools.

The Strategy for Change

So, how might we actually get from where we've been to where we need to be — in light of all this historic and perfectly understandable resistance to change?

First, it's important to understand that it is almost impossible to convert an entire existing school into one of these innovative schools. These new kinds of schools generally need to be choice schools. In other words parents and students need to be legally able to choose to enroll.

Most of the children in our existing schools feel that they are being well served by the traditional model, and they and their parents would resist strongly any effort to substantially change the school they are now attending. In addition, there is always the problem of forcing children to participate in what could accurately be called an experimental school.

Consequently it is best to think of this effort at innovation as being a second strategy alongside our efforts to improve the schools we now have. Even then there will always be strong resistance from the existing schools because this effort will remove students and the resources intended for their education as they choose to enroll in these new and different schools.

It is this reality that makes it so hard for the district sector to be active in this type of innovation effort. But just because something's difficult doesn't mean we shouldn't continue to try different approaches that would help districts participate in these kinds of innovations.

In particular, the legislature needs to be actively involved in

helping the district sector to be part of the effort to create new and fundamentally different public schools. Creating a start-up funding stream for new and different schools in the districts would be helpful. Legislation addressing the need for expanded autonomy in these schools within the district setting is also desirable. But even with these legislative changes, it will be difficult for most districts to create schools that compete with their existing operations.

Perhaps the best chance for districts to become involved in this innovative effort lies with the rural districts that are dealing with falling enrollment. Many of these districts are simply not going to be able to continue to operate if they stay with the traditional model. Facing the possibility of losing the schools entirely may make it easier for these districts to begin to implement fundamentally different approaches.

For example, several districts could join together and, using new design features, create a school(s) that would serve several (perhaps many) communities without the need to build the typical "cornfield" school that has become common. It clearly is legally possible for districts to create these kinds of schools, but it is quite difficult politically for districts to create schools that compete for students and resources with their traditional models. Getting anywhere near a consensus on this type of change is very difficult.

Because of this reality, chartering may be the best approach in attempting to create these new and different schools. Creating a chartered school does not require approval of the local school board. It also does not require that the regular school be fundamentally changed. It allows the students and parents who find the existing school satisfactory to stay with that option while allowing families who want a different educational experience to select the new school.

The research from our private sector in America indicates that the most profound changes come through the creation of new organizations and that seems likely to be the case with education as well. This indicates that the chartering sector will need to play an important role in this process of innovation we envision. While Minnesota's chartering laws are quite well structured, there are issues in the chartered sector infrastructure that also need legislative attention.

* * * * *

Having attended school in a small town, having taught for several years in that sort of setting and having represented several such districts while a legislator, I am aware that there are several motivations that communities have for keeping their schools viable. And student learning is only one of them.

Many in a community think of the schools as the social center of the community. Many of the community gatherings occur around school activities. For others the school represents a significant source of financial resources for the community and helps sustain the economic vitality of the community. It will doubtless take lots of community discussion, but ultimately the community will decide that student learning is the feature that needs to be preserved above all else.

All of us who have grown up in rural settings understand that there are many positive aspects of life in such communities, but it will be quite difficult to attract young families if there is no local opportunity for student learning. Many of the communities in our state have had to forgo all of these desirable options because there seemed to be no viable alternative.

But that is no longer the case. Just as information has become more distributed and as work is increasingly possible from any location, so too is learning able to become distributed to almost any location. Models exist today for new approaches to learning making good use of the new technologies that will meet the needs of many of our smaller communities and enhance the learning experience in all of our communities.

We need to be open to changing our visions of what schools are and what schooling is. This will not be easy. This will require bold and strong leadership. This situation provides an exciting opportunity for civic leaders, for local business leaders, for political leaders and also for funding organizations to participate in the redesign of our education system in this country.

We have our ancestors to thank for giving us a public education system that served us very well during the 20th century. Will we have the vision, the courage and will to create a public education system that meets our learning needs during the 21st century? It will not be comfortable, but it is doable and it will be exciting and fulfilling. Some wise person once said that "the best way to predict the future is to create it yourself."

Questioning Conventional Wisdom About Minnesota's Public Schools

Joe Nathan & Laura Accomando

This article goes "against the grain" of much that has been written about improving public education in the last five years. Is there something wrong with the emphasis on the "achievement gap" in studies about Minnesota education priorities? Might rural communities like Canby, Clinton, Graceville, Pierz, Lamberton, Lewiston and Lyle have things to teach affluent Minnesota suburbs, as well as inner cities? Can highly successful inner city public schools, district and charter, teach Minnesota important lessons? Are some of us misunderstanding certain lessons about the impact of high-quality early childhood education programs? For Minnesota to make significant progress, should we go beyond the constant demand for more educational funding?

This article argues that the answer to each of these questions is "yes." Moreover, Minnesota's leadership and success with many students may, as has happened in the past, make big changes more difficult. Yet, as Abraham Lincoln once noted, "The dogmas of the quiet past are inadequate to the stormy present" (Lincoln). We need more ambitious goals, and significant institutional changes to reach those goals.

Where should we be heading?

This article will suggest that a new model of public education should have as its central goals within the next five years:

1. Completion of some form of post-secondary education, two or four years, by at least 95% of Minnesota students within six years of the time they graduate from high school.
2. 95% of students who enter Minnesota public colleges and universities fully prepared in reading, writing and math for this work.
3. 75% of all Minnesota high school students taking at least one

      college-level course prior to high school graduation, be it via AP, International Baccalaureate, College in the Schools or PSEO.
4. Completion by all students of a service learning project before they graduate from high school.
5. Increase in the replication of successful district and charter public school models.
6. Full funding of high-quality early childhood education programs for all students from low-income families

These goals are similar but not identical to those identified by the Governor's Education Council earlier in 2007. The Council, including the President of the University of Minnesota, Chancellor of the Minnesota State Colleges and Universities System, Commissioner of Education, head of the Minnesota Private College Council, Minnesota Business Partnership and others, recommended among other things that:

- All students should take and master academic competencies in four areas by 2014.
- 100% of Minnesota students should "achieve a score defined as "college ready" by ACT for all four indicators (mathematics, English, biology and social sciences).
- 100% of students should graduate from high school.
- The number of students who take post-secondary remedial courses, and graduate within three to six years in post-secondary institutions, should be measured and reported to the public (Minnesota Department of Education, pp. 4-11).

These are extremely ambitious goals (i.e. 100% of students graduating from high school, 100% of students being college ready as defined by ACT).

However, the specificity of goals like these responds to recommendations from Jobs for the Future, a Boston-based research group that has studied what it calls "Post-Secondary Attainment" extensively. JFF urges states to:

- "Set a small number of realistic but ambitious goals — and then create a concise action plan delineating roles, responsibilities and a timeline.
- Disaggregate goals by population subgroups to emphasize the importance of progress that is equitable.
- Relate goals logically and clearly to the problems the state wants to address.

- Inform the public of the status of statewide higher education goals, instead of reporting solely on goals set for individual institutions.
- Use public agenda and awareness campaigns to build and sustain both public and political will and to reach out to populations that are traditionally under-represented in higher education" (Collins, p. IV).

Assuming that the reader agrees with at least some of the goals proposed above, the next question becomes: What are the key strategies to help Minnesota accomplish them? Do we need major system change, or will more money and modest changes get us there?

Evidence is presented below that the most important strategies for Minnesota's public education system are:

- Fully fund high-quality early childhood education programs for children from low-income and limited English speaking families.
- Require that students participate in at least one research-based learning/community service project during elementary, middle and high school years.
- Replicate the most successful district and charter public schools in the state and nation.
- Expect that virtually all students will take at least one college (academic or vocation) level course prior to graduating from high school

Money can be helpful, but it is not enough. One study by a Harvard and MIT professor examined 16 elementary schools, each of which was given an extra $1.5 million over a five-year period. Their goals were to increase achievement and academic test scores. There was little, if any progress in 14 of the 16 schools. Two showed major progress. The authors concluded that money was not enough to produce major improvements. Major changes were needed to produce significant progress (Murnane & Levy).

In this spirit, Governor Tim Pawlenty observed in his 2007 State of the State speech that:

Too many of our high school students today are engaged in academic loitering for much of their high school careers. In too many cases, our high school students are bored, checked out, coasting, not even vaguely aware of their post-high school plans,

if they have any, and they are just marking time. It's costing us a lot of money and it's costing them their future. This is a silent crisis and it has the potential to devastate our future prosperity if we don't fix it (Pawlenty).

Among other things, the Governor proposed that *all* students earn some college credits while still in high school.

In responding to the Governor's comments, a state task force convened by the Minnesota Association of Secondary Principals recommended: "The new vision for Minnesota's high schools should be to prepare every student to earn a credential or a degree at a post-secondary educational institution — whether it is a technical school, two-year college, or four-year college or university" (Future of High Schools Task Force, p. 3).

This author agrees with that vision. It is a wise, worthy and dramatically different goal for Minnesota high schools. But vision is not enough. Policies and well-developed, skillfully implemented strategies must be in place. And we have to be honest about what is and is not being accomplished.

In reacting to Governor Pawlenty and an earlier statement by Microsoft Chair Bill Gates, a Minnesota Secondary School Principals Task Force wrote:

> Over the course of our discussions in early 2007, we agreed that the depiction of high schools offered by Minnesota's governor and the world's richest man fails to reflect many of the positive realities of the schools we lead. Each day we work with talented and dedicated teachers who bring literature, science, math and many other subjects to life for students — too often while managing class loads of more than 170 students at a time. Their commitment and their successes should be acknowledged and celebrated (Future of High Schools Task Force, p. 1).

The Task Force went on to list accomplishments of many Minnesota high schools, including high graduation rates and American College Testing Service scores that are among the highest in the nation (Future of High Schools Task Force, pp. 1-2).

Yes, Minnesota ranks near the top in the U.S. on many measures (but not all, as we shall see below). However, complacency can be a problem. Failing to see the whole picture can produce partial solutions.

Minnesota's secondary school principals did acknowledge changes were needed, noting, "Anyone who has read the typical

high school course catalog knows that most high schools lack a clear vision for what students will do after graduation" (Future of High Schools Task Force).

The challenges we face are *not* just the lack of a clear vision. And the challenges are *not* just the racial and economic class achievement gap that is constantly raised in Minnesota.

One recent example illustrates the constant focus on the racial and social disparities in student achievement: *Mind the Gap*, produced by Brookings Institution, with support from some of Minnesota's most powerful groups (including the state's largest foundation) and a collaboration of major state businesses and the University of Minnesota. This report is often cited and is intended to help set the state's agenda. *Mind the Gap* asserts, among other things that "The Twin Cities has a lot to be proud of. But it's the story that these large, aggregate numbers do not tell that is of concern" (Sohmer, et. al p. 9).

The report stresses "The overall health of the region masks stark disparities. And such disparities matter to economic competitiveness." The report concludes, "If ignored, growing race, class and place disparities will hamper the region's future workforce and overall economic health" (Sohmer).

Yes, Minnesota has dramatic racial and economic disparities. But there are also stunning records of academic under-achievement in places of considerable wealth, with little racial diversity. While considerable attention is focused on the achievement gap, there are major issues in college preparation with a range of students of *all* races. Despite what *Mind the Gap* says, this also should be "of concern."

Being Clear About where Minnesota is Now

Where are we now in terms of college readiness, enrollment and graduation? Yes, there is an achievement gap:

- 80% of white Minnesota students graduate from high school in four years, compared with 40% of American Indian students, 68% of Asian students, 38% of African-American students and 39% of Hispanic students (Minnesota Department of Education, April, 2007).
- An examination of the scale scores of students on the third-grade mathematics Minnesota Comprehensive Assessments (MCAs) shows a persistent achievement gap between students of color and white Non-Hispanic students. Over the course of the six years that the exam has been given, "there

has been little to no progress in closing the achievement gap" (MMEP, p. 23).

• Disaggregated graduation rates at Minnesota four-year institutions show that 60% of white students graduated in 2003 (compared to a four-year graduation rate of 52% in 2003,) 47% of Hispanic students graduated in four years in 2003, compared to 45% in 2000, 38% of African-American students graduated in four years in 2003, the same rate as 2000, 53% of Asian-American students graduated in four years in 2003, compared with 49% in 2000, and 26% of American Indian students graduated in four years in 2003, compared with 29% in 2000 (MMEP).

Some schools in unexpected parts of Minnesota are doing a far better job of preparing students. But before discussing these students, let's examine statistics that are *not* found in reports like *Mind the Gap* or the Minnesota High School Principals Report.

For several years, the American College Testing program issued reports showing what percentage of college graduates who take their tests meet what they regard as an entry-level college benchmark in English Composition, College Algebra, Social Science and Biology. The standards reflect ACT's experience that a student has "a 50% chance of obtaining a B or higher or about a 75% chance of obtaining a C or higher in the corresponding credit-bearing college courses" (ACT, p. 3). Results for Minnesota's graduating class of 2007 are as follows:

• 31% met the benchmark in all four areas
• 38% met the benchmark in biology
• 62% met the benchmark in social science
• 86% met the benchmark in algebra, and
• 78% met the benchmark in English composition

ACT disaggregated the Minnesota data by race and found:

• 42% of white students, 63% of Hispanic students, and 84% of African-American students did not meet the math standard.
• 59% of white students, 80% of Hispanic students, and 93% of African-American students did not meet the science standard.
• 35% of white students, 55% of Hispanic students, and 74% of African-American students did not meet the reading standard.

- 19% of white students, 40% of Hispanic students, and 63% of African-American students did not meet the English standard
- Overall, only 33% of white students, 19% of Asian-American students, 17% of Hispanic students, 11% of Native American students, and 5% of African-American students met all four benchmarks (ACT).

While these data show a gap between white and students of color, they also show that substantial numbers of white students are not meeting the expected standards.

A study (Minnesota State Colleges and Universities System and University of Minnesota, 2005) showing results for *every* Minnesota public high school found:

- Overall, more than one third of students who graduated from Minnesota high schools in 2000-2003 and then entered a Minnesota public college or university took at least one remedial course in reading, writing or math (MnSCU, p. iii).
- Further analysis by the Center for School Change found that not a single Twin Cities metropolitan-area public high school (including none of the Twin Cities suburban public high schools) ranked in the top fifty of this report — the fifty public high schools with the *lowest* percentages of graduates taking remedial courses after entering Minnesota public colleges and universities (Nathan, 2005).

The Center for School Change also found that all fifty of the top high schools, using the criteria immediately above, are in greater Minnesota. Moreover, 45 of the 50 are quite small. (Some suburban superintendents correctly note a high percentage of their graduates attend private and/or out-of-state colleges and universities not covered by this study.)

Before learning more about the fifty high schools with the strongest records (using criteria cited above), it's worth reviewing a few other statistics. The Minnesota Office of Higher Education reports that:

- During the 2004-05 school year, approximately 20% of Minnesota high school seniors earned college credits before graduation.
- 65.3% of Minnesota's 2004 high school graduates were enrolled in some form of higher education the following fall.

- 36% of Minnesota students graduated from a four-year institution within four years of entering, and 57% of students graduated within six years.
- As of 2004, 35.8% of Minnesota students graduated from a two-year institution within three years of entering.
- As of 2004, 48.7% of Minnesota's young adults (ages 24-34) have either a two- or four-year degree.
- This percentage of young adults with a degree places Minnesota second in the nation (Minnesota Office of Higher Education, web-based report).

It is good to be highly ranked relative to other states. But when less than half of young adults have earned a degree, we are a long way from virtually all of our students having earned a degree.

A recent national report helps put Minnesota in fascinating perspective. This report notes that Minnesota ranks fifth of 50 states in high school graduation rate. But Minnesota ranks 25th in terms of "high school graduates' academic readiness for college" (Rocha and Sharkey, p. 5).

With support from the Blandin and Annenberg foundations, CSC staff visited seven of the 50 rural high schools that had the smallest percentage of graduates taking remedial courses after entering public colleges and universities. We found that these high schools had many of the characteristics researchers associated with high percentages of students attending college, regardless of family socio-economic status. This includes:

> College culture in high school cultivates aspirations conducive to preparing for, applying to and enrolling in college. A strong college culture is tangible, pervasive and beneficial … it includes academic momentum, an understanding of how college plans develop, a clear mission statement, comprehensive college services and coordinated and systemic college support … the ideal college culture should be inclusive and accessible to all students (Zoe et. al. p. 3).

The authors recommended five key elements that would help indicate such a culture: academic momentum, an understanding of how college plans develop, a clear mission statement, comprehensive college services, and coordinated and systematic college support" (Corwin et. al, p. 3).

Potential Models

We found many of these features present in the eight schools we visited. They included seven district schools and one charter public school. (Laura Accomando wrote seven reports. The Minnesota New Country School profile was written by Joe Nathan.) Here are brief snapshots:

LEWISTON ALTURA HIGH SCHOOL

"We have a whole emphasis on community learning and trying to create the curriculum that is going to best meet the needs of the students, what they're doing and where they're going. Our goal is to help the students become productive members and go on to do great things." — Lori Anderson, High School Counselor

Located in the small agricultural city of Lewiston (population 1,484), Lewiston Altura High School is the "backbone of the community," says tenth-grader Lexi. "It's good to know the teachers and community will support you." The staff and community both have high expectations for students who attend the high school. "The community expectation is for students to continue to post-secondary education," says community member Jim Ziegler. "Continuing your education garners respect, and the community keeps tabs on students who have graduated." This strong community support for higher education is evident in the many and varied local scholarships offered to high school students. "Our focus is on having them prepared for college, not just on getting them through high school," says Lori Anderson, high school counselor. "We really try to get the message across that having a high

> Student enrollment, grades 7–12: **362**
> Students continuing to higher education: **52%**
> Students taking post-secondary remedial courses: **20%**
> Total funds spent per student: **$7,247**

school diploma will not be competitive enough." This message is not lost on the students. According to twelfth-grader Courtney Clark, "Our teachers and the community stress the importance of going to college, whether it's a two-year or four-year. At least I know the community is behind me.

Education and college preparedness are clear priorities at Lewiston Altura High School. Personal relationships, however, are just as important. "We get to know the students and staff well because of the size of our school," says Ann Gerth, high school math teacher. "Students seek advice from teachers, and they know we

understand them." Chuck Penheiter, high school science teacher, says that knowing the students on a personal level has a clear effect on the courses that are offered. "We have a chance to design classes that students want, like the crime scene investigations class. The teachers here will do a lot of extra work for students." When designing curriculum and course offerings, the staff also takes the input of former students into consideration, via an annual survey of recent graduates. "The curriculum is based on what students need," says Penheiter.

Eleventh-grader Zane attributes student success to the small size of the high school. "We get to know the teachers, and we get a lot of help. One of the key components is a small, close environment. It goes back to that, everybody knows everybody."

2006 Test Results: MCA-II Reading, grade 10: 76% passed (state average: 65%); MCA-II Math, grade 11: 37% passed (state average: 30%); BST Writing, grade 10: 96% passed (state average: 93%)

CANBY HIGH SCHOOL

"We always want students to do their best. We challenge them at a high level, and they have to work harder to get an 'A.' We have very high expectations." — Laurie Kallhoff, high school science teacher

The city of Canby (population 1,903) is very supportive of its high school. "There is a strong sense of pride in our community," says community member Pete Schmitt. "We are proud of our community and we are proud of our high school. The students really get a sense of ownership in their school because of it." The school and community work together to assure that students stay involved and that community members are visible at the school. The high school makes space available for community events and occasionally hosts speakers or workshops, to which the public is invited. The community creates opportunities to keep students involved, such as service learning projects and volunteer programs. "In many ways the high school is the hub of the community," says Craig Kaddatz, community member and vice president of the school board. "School activities are the whole social life for kids, and the community is definitely in touch

Student enrollment, grades 7–12: **329**
Students continuing to higher education: **54%**
Students taking post-secondary remedial courses: **22%**
Total funds spent per student: **$8,891**

with that."

Canby High School places a strong emphasis on caring about students. "It starts with the teachers," says high school English teacher Gaye Winter. "We have a good rapport with each other, and that affects the way we work with students and the way students work with each other." In many ways, the staff treats students as adults, rather than children. "We feel that teaching responsibility is just as important as teaching content," says technology coordinator Dan Lutgen. Students often find themselves in leadership positions, which the staff feels builds character and reinforces many core values. These leadership roles do come with certain responsibilities, however, and the students are aware that the staff and community have high expectations for them. "The kids here have goals. They know we don't just want them to show up, we want them to do something," says Gary Stokes, local business owner and parent of a former student. The curriculum is rigorous, and the content of many of the courses offered at the high school is geared toward college preparation. "We've met with the [post-secondary] institutions and asked 'What do you want these kids to know?' We try to prepare the students for what happens beyond standardized testing, so they know the expectations colleges will have for them," says Perry Fink, high school math teacher.

2006 Test Results: BST Writing, grade 10: 97% passed (state average: 93%)

MINNESOTA NEW COUNTRY SCHOOL

The Bill and Melinda Gates Foundation has given Minnesota New Country School (MNCS) more than $7 million to help other communities replicate the school. It's one more sign of confidence in a unique school that is attracting national attention.

MNCS serves about 120 students, grades 7-12. Students come from rural communities approximately 50-80 miles southwest of Minneapolis. Teachers in the school have organized themselves as a worker's coop under Minnesota's charter school legislation. MNCS literally is owned by the people who work there.

According to MNCS co-founder Dee Thomas, all students are required to put together a three-, five- and 20-year plan. This helps students decide what they are planning to explore for their careers,

post secondary education and other life. All students are strongly encouraged to take at least one PSEO course prior to graduation, and approximately 75% of students do this. MNCS has, in some cases, developed a contract between itself and a post-secondary institution to allow a student to enter a PSEO program when the student's test scores are not high enough for admission for PSEO but MNCS staff believe that the student can be successful (Thomas, 2007). One result of this is that more than half of MNCS students enter a Minnesota public college or university on graduation, and less than 15% of them take a remedial course. (This puts MNCS in the top 10% of all Minnesota public schools in terms of small percentages of graduates in public colleges and universities who took remedial courses.)

Minnesota New Country students must demonstrate various skills and knowledge in order to graduate. The school's program, however, is totally individualized. The school year starts in August with a family/student/advisor conference to plan out the student's program.

The school has no required courses, no grades and no bells, but it does have approximately one computer for each student. Students each have their own workspace, which includes a desk, computer and personal storage space, which can be decorated with pictures of the students' friends, family and other items of personal interest.

Students' programs consist of independent and small group study, internships and apprenticeships. Students are expected to make public presentations three times a year, describing some of the things they are learning. Some of the students have become so sophisticated with computers that area businesses have hired them to develop and maintain the businesses' web sites.

The head of the Gates Foundation's Education Program has called this school "one of the most exciting high schools in the country," because it carries out so much emerging research about school size, thoughtful use of technology, and appropriate programs for secondary students.

Minnesota New Country School began in 1994. For the first four years, the school operated from three store fronts on Main Street in LeSueur, MN (known to some as "the Valley of the Jolly Green Giant"). In 1998 the school moved several miles to its new home in Henderson, MN.

MNCS faculty, parents and students designed the new home together. It is primarily a large, open space with several rooms along the sides to house small groups of people who need a quiet space for meeting. In the center of the large open main room is a stage, behind which stands a large silo. The silo represents the architectural

heritage common to many of the school's students.

MNCS is among the top ten Minnesota public high schools in terms of *low* percentages of graduates entering a Minnesota public college or university and taking a remedial course. MNCS students have shown consistent improvement on standardized tests required by the state of Minnesota. The school also has developed ways to measure student writing and public speaking skills, along with student persistence on various tasks. MNCS has research showing that its students compare well on this assessment to other students from similar backgrounds.

CLINTON GRACEVILLE BEARDSLEY MIDDLE/HIGH SCHOOL

"The school has always had a kid-first focus. We're here to educate the kids the best possible way. We've always wanted the kids to leave here knowing they're getting the best education they possibly can get." — Luann Kleindl, parent and former board member

The high school is located in the town of Graceville (population 605) and also serves the towns of Clinton (population 453) and Beardsley (population 262). The Clinton and Graceville school districts were consolidated in 1990, and the Beardsley school district was consolidated in 1998 to form the Clinton-Graceville-Beardsley School District. The consolidation has served to strengthen the sense of community among residents of the three towns. Deb Stueve, Business Education teacher, says, "We have great community support, straight across the board, regardless of whether they have kids in school or not." According to Julie Hendrix, a para-professional at the high school, it's not unusual for high school sports teams to "go to away games that are

Student enrollment, grades 7–12: **209**
Students continuing to higher education: **56%**
Students taking post-secondary remedial courses: **13%**
Total funds spent per student: **$9,543**

50 miles away and have more people there than the home crowd." This level of community support does not go unnoticed by the students, either. "Knowing the community is involved helps us out because we know we can go to a community member and have them

help us, we know that they'll be there for us," says Maggy, a ninth-grade student. As twelfth-grader Matt puts it, "We're from small towns so everyone knows everybody else. We're just family and friends, so everyone gets along."

The relationships that develop between staff and students as a result of being part of a close-knit community play an important role in the school's learning environment. "As a whole staff, we have very high expectations for our students. It's very important that the teachers here have held students accountable and the academic rigor of the courses is not compromised," says school counselor Melissa Lundquist. These expectations extend beyond what the students might accomplish in high school.

"One of the things we've done is set some criteria for our kids. A lot of us spend time talking about what they can look forward to in the future, what they have to do to achieve their goals," says Ronald Kaess, activities director and teacher. "They're looking to the future that way, and our students have always looked to the future."

The curriculum at CGB High School assures that students will not only have a plan for life after high school, but will also be able to execute that plan. Luann Kleindl, parent and former board member, says, "There has always been a push to come up with new programs and not lose existing programs … so the kids go into college prepared and ready, not needing to play catch-up with all the other students going to those colleges. Academics have always been first, and that shows in the programs that are offered."

2006 Test Results: BST Writing, grade 10: 96% passed (state average: 93%)

LYLE HIGH SCHOOL
"We have a huge percentage of students who go to college. We're always asking them, 'What are you doing, where are you going?' There is definitely the expectation that they won't stop going to school after they graduate."
— Amy Thuesen, Language Arts teacher

Lyle, MN, (population 576) is situated within one mile of the Minnesota/Iowa border. The high school serves Lyle and the surrounding area, and also enrolls some students from the nearby city of Austin. In 2005, the community passed a referendum for a new school building, which was completed in time for the 2006-2007 school year. "It was a great feeling when the referendum passed," says 11th-grader Ryan. "We knew [the community] cared about us when that happened." In a town this size, everybody knows each

other, and that makes staying involved easier. "We have a very active parent and teacher organization," says Language Arts teacher Amy Thuesen. "When the kids see the people involved in the community, they feel a sense of gratitude. There's a feeling that the community believes in them." Even after students graduate, they still feel a tie to the community where they went to high school. "Students come back from college to tell us what it's like, and some of them even come to their old high school teachers for help with college classes," says Lindsey, an 11th-grader.

The expectations for students who attend Lyle High School are high, but the small class sizes mean that students get more one-on-one interaction with their teachers. "Teachers here are our friends. They have very high expectations, and there is the definite expectation that you'll go to college, but it's easy to get the help you need from any of the teachers," says Lindsey. Tutoring is offered both before and after school hours, and Saturday classes are available on a case-by-case basis. The high school uses a block schedule, and according to 11th-grader Josh, this allows the students to focus on more specific subjects. "We have more time for each class, so we can really get into some in-depth topics." Eight different Advanced Placement courses are offered, rotating four each year, and most students take

Student enrollment, grades 6–12: **134**
Students continuing to higher education: **61%**
Students taking post-secondary remedial courses: **21%**
Total funds spent per student: **$8,091**

at least one of these courses. "For a school our size, that's a lot of college-level courses," says Principal Royce Helmbrecht. "We really encourage students to take AP classes because it allows them to get a more challenging curriculum while still being in the small, safe high school environment."

2006 Test Results: MCA-II Reading, grade 10: 69% passed (state average: 65%); Writing BST, grade 10: 96% passed (state average: 93%)

LAKE OF THE WOODS HIGH SCHOOL

"The pride you see in students is part of the success. They're ready to learn, they're eager to learn, they want to learn. They're able to sustain that. Somehow there's the mentality in the student body to challenge themselves. And it's not just academically. They have a lot of really excellent athletes, musicians and artists. The overall mentality is to succeed." — Joyce Palm, parent and volunteer

Lake of the Woods School is located in the small resort community of Baudette, MN (population 1,104), just miles from the Canadian border. The community works hard to ensure that students recognize themselves as an integral part of the remote city. "We have a skate park because we wanted something positive for the kids to do. That shows value to the youth, that they're valued. The kids were involved in that, and actually designed the skate park.

"They see themselves as valued members of the community and feel respected," says Cathy Christensen, a parent. John Oren, community member, adds, "These kids are involved and they want to be involved. There is an absolute excess of enthusiasm. Without pride there is no incentive

Student enrollment, grades 7–12: **323**
Students continuing to higher education: **52%**
Students taking post-secondary remedial courses: **21%**
Total funds spent per student: **$8,519**

to develop, improve, to expand your horizons." And the students at Lake of the Woods School do, in fact, have that incentive. They appreciate and even seek challenges, regardless of the context. "If you do something well here, it doesn't go unnoticed. The students challenge one another," says 12th-grader Kari.

There is a clear expectation at Lake of the Woods School that students will continue to college. "Our teachers say 'when you go to college,' not 'if you go to college,'" says 12th-grader Sam. "Every class at our school prepares you for college." The teachers, as well as the community, are perpetually supportive and encouraging of students setting and reaching goals.

Laura Jo Pieper, who is in her 25th year of teaching at the

school, says, "You just know, you expect, that they're going to go out and make something of themselves, be successful, and add to the community." Staff members place a great deal of emphasis on making sure the students are well prepared for what they will face after high school. "We have spent a considerable amount of time aligning our curriculum to the standards. In doing that, you're looking at every grade level — what are they doing and how is it overlapping to what we're doing and connecting," continues Pieper. Don Krause, high school social studies teacher, adds, "The students know they're getting an education that's worth something."

2006 Test Results: MCA-II Math, grade 11: 45% passed (state average: 30%)

PIERZ HEALY HIGH SCHOOL
"We have fun at school, but we also definitely still have a learning environment. Our school has a reputation for being really good, and it's important to us to keep that up." — Kelsey, 11th-grade student

The central Minnesota city of Pierz takes pride in its German heritage. The 1,277 residents also take great pride in their high school and the high school students. The community newspaper features two "students of the month" each month during the school year, and community volunteers are very active within the school. "The administration really allows us to feel we own the school and are a part of it," says parent and Chief of Police Steven Boser. "The district promotes a healthy, positive atmosphere, and our community is really proud of that."

Denny Rothstein volunteers regularly at the high school and says "the positive attitude from the community has a top-down effect. The more the

Student enrollment, grades 7–12: **526**
Students continuing to higher education: **61%**
Students taking post-secondary remedial courses: **16%**
Total funds spent per student: **$6,970**

community partcipates in the school, the more ownership they feel." Volunteering is not the only way community members show support

for students. Extra-curricular events are very well attended, and many opportunities have been created for students to be involved outside of school hours. "There is a direct link between community involvement and student success," says community education director and parent Mary Tschida. "We have the 'it takes a village' mentality."

Planning for the future, whether it is a career or college, is a key part of being a student at Pierz Healy High School. The staff maintains high expectations for the students, both while they are in school and after they graduate, and these expectations start early. Jonathan McCollum, science teacher, says, "By the time they reach high school I see students that are prepared. They have a good basis of knowledge. This wouldn't happen if expectations weren't high in middle school and elementary as well." The students are expected to maintain a strong work ethic and continue their education after they graduate from high school. The school has established a career center to help students with the college search and application process, career planning, and financial aid information. Judy Maierhofer, who runs the program, meets individually with every 12th-grade student and their families each fall. "There is a lot of parent support," she says. "We make sure parents are aware of all the things that are coming up and know how important these things are. We're all invested in making sure the students succeed."

2006 Test Results: BST Writing, grade 10: 95% passed (state average: 93%)

RED ROCK CENTRAL HIGH SCHOOL
"There's a high level of expectation from parents and the community. Everything we do here is relevant, and the kids sense that early on."
— Bob Van Maasdam, high school music teacher

Red Rock Central High School is located in the city of Lamberton, MN (population 859). The district is the result of the 1997 consolidation of the Lamberton and Sanborn districts. The high school has since established a definite connection with both communities. For over a decade, the school has been providing Internet services to residents of the surrounding community. Forest Benz, former high school principal, says that the "emphasis on technology has been very successful at bringing the community together. The Internet is one of the biggest ambassadors for the

school." The program also actively involves students in the community. Students conduct service calls within the community, sometimes even going to residents' homes. This connection is beneficial not only to the students, but to the residents they interact with. According to Ronald Kelsey, community member, "People in the community know what's going on, and it's important to them to know what's going on in the school. It ties the community together. It's a strength for the school." This interconnectedness helps build relationships between teachers and students, as well. "You're never not a teacher," says social studies teacher Jason Kedl. "Everyone knows everyone here, and staff and students interact outside of school on a regular basis."

Participation in extra-curricular activities is an important part of student life at **Red Rock High School**. A large percentage of the students participate in multiple activities throughout the year. "Because of the high level of

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Student enrollment, grades 6–12: **265**
Students continuing to higher education: **61%**
Students taking post-secondary remedial courses: **23%**
Total funds spent per student: **$9,432**

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activity participation," says Paula Derickson, school board chair and parent, "the students develop a real concept of time management. The kids want to do well to reflect well on their teachers, and the high standards teachers have for themselves translate to high standards for the kids." The students are proud to be involved — and their families are proud of them. Often there is a family history of school involvement and success, as families have been in the community for several generations. "The parents certainly have a sense of ownership in the school and in their kids' education. As teachers, we're accountable to the parents," says high school math teacher Beverly Larson. The staff strives to meet high parent and community expectations by delivering a rigorous and cohesive curriculum. "We try to hit all levels of ability and interest," continues Larson. "There is a flexibility in our course offering, and kids don't fall through the cracks."

2006 Test Results: BST Writing, grade 10: 100% passed (state average: 93%)

Making Youth-Community Learning a High Priority

Completing some form of post-secondary education does not guarantee that students will be active, involved citizens. Fortunately, growing research shows that youth/community service can help accomplish both academic and citizenship goals. Recent studies of service learning programs show students engaged in service learning

- Gain enhanced citizenship and social responsibility and enhance their awareness and understanding of social issues.
- Acquire positive effects on key personal development areas, such as self-esteem, empowerment, self-efficacy, and engagement in pro-social behaviors.
- Can enhance students' engagement in community and civic affairs (Furco, p. 11).

The same literature review finds that these benefits do *not* come at the expense of academic achievement: "Several studies of service learning in K-12 education have revealed a number of positive academic outcomes for students. Specifically, service learning has been found to increase scores on standardized tests, foster content knowledge and skills, improve attendance and improve grade point averages" (Furco, p. 10-11).

Two major research reviews of effective programs for youth found that service learning was one of the six key components of effective youth development. The first, a review of 69 major studies noted:

Increasingly, the interventions and their evaluations are also telling us that young people respond positively when they are regarded by adults as resources, as contributors to their own growth and development, not merely passive receptacles requiring services. … Young people can participate in the solution of many of their own problems and act as solid contributors to the welfare of others in their communities (American Youth Policy Forum 1997, p. xi).

The second review of 49 studies pointed out,

Seeing youth as resources, particularly through community service and service learning, was cited as important in five

Volume 1 and 13 Volume II evaluations. … In both (reports), data on participant academic achievement, employment and earnings were quite positive for service related programs (AYPF, 1999, p. xv).

One well-developed youth service/civic education initiative, based at the Humphrey Institute of Public Affairs at the University of Minnesota, is called Public Achievement (www.publicachievement. org). A recent outside study involving more than 500 students found that:

- Participation in Public Achievement gave students wider perspectives on the world and better skills in working with others.
- Elementary school students who had sustained participation in Public Achievement were more likely than their peers to acquire civic skills and to believe that young people can make a difference in the world.
- Middle school students who participated in Pubic Achievement gained multiple civic skills and were more likely to take responsibility for helping their schools become positive learning environments.
- High school students who reported a high level of interest in the Public Achievement projects acquired multiple communication skills, including oral persuasion and listening skills (RMC).

Minnesota might look at what Maine legislators are considering. According to an official at the National Youth Leadership Council, in Fall 2007, "the Maine legislature is expected to enact revised state performance indicators for social studies that require students in each grade span (PK-2, 3-5, 6-8, and 9-diploma) to complete a service-learning project or civic action."

The projects culminate in high school when students are expected to "select, plan and implement a civic action or service-learning project based on a community, state, national, or international asset or need using appropriate and relevant knowledge and skills, including research and ethical reasoning skills, and reflect on the project's effectiveness and civic contribution" (Nate Schultz).

College Level courses for high school students

Why should most students take at least one college-level

course before graduating from high school? Researchers from the American Youth Policy Forum found that students who took such courses (PSEO, AP, IB, or College in the Schools) were more likely to attend college. Moreover, one study disaggregated data and found that participating in such courses increased college attending rates for groups traditionally under-represented in post-secondary education (Lerner and Brand, p. 115). They conclude that such courses "result in positive outcomes for youth, especially with regard to performance in high school, earning college credit while in high school, and better grades in college" (Lerner and Brand, p. 124).

Governor Pawlenty has urged that *every* Minnesota high school student take at least some college level course prior to graduation. The research cited above suggests the value of doing this — and the array of programs, from STEP to PSEO at Minnesota New Country, to AP and College in the Schools at a number of the rural high schools cited above, shows how this might be done.

Cincinnati's Withrow University offers another model. Started with assistance from the Bill and Melinda Gates Foundation, this school is open to all, with no admissions tests. Withrow's ninth-graders participate in a "Bridge program" on the campus of a nearby college. Principal Sharon Johnson reports, "Many of our students have never been on a college campus, even though most live within five minutes of a campus" (Johnson).

Such college experiences early in a student's high school years are one of several things suggested in a book about producing college students from young people who would be the first in their family to enter or graduate from a higher education institution. As one student wrote, "Stepping foot on a college campus as a high school student puts you much closer. You can only go after things that you know about. … It makes it more tangible, something that you can grasp and build on" (Cushman, p. 2).

Taking courses on a campus and meeting with college officials changes the way many students think about themselves and their college options. Withrow produced higher test scores and graduation rates with inner city, predominantly African-American students than many suburban schools. Withrow consistently ranks 10-20 points above the state average in percentage of students achieving proficiency on the state's required tenth-grade graduation test. In this school 92.2% of African-American students have achieved proficiency in reading and 83.7% have achieved proficiency in math. This has been achieved in a school that is 92.9% African-American and 4.4% white and 44.5% economically disadvantaged. Students with disabilities make up 14.4% of Withrow University High School.

Yes Prep

Newsweek Magazine named YES Prep in Houston, Texas, one of the nation's top 100 high schools in May 2007. Children at Risk, a non-profit group, recently ranked YES Prep as the second best high school in the area, based on graduation rates, college entrance test scores, Advanced Placement Test scores and other factors. The school ranked above a number of schools that use admissions tests, which YES Prep does not (Barbic).

The grades 6-12 school, serving approximately 720 students, is the first of four Houston-area YES Prep campuses started by Chris Barbic. The four schools serve a total of approximately 1,500 students. YES Prep explains that its "ultimate goal is to create a critical mass of college-educated students who can then return to Houston and bring real change to our city's disadvantaged neighborhoods and communities"(YES Prep).

"YES" stands for "youth engaged in service." Students are required to provide community service one Saturday per month. The community service projects are designed to help students learn that they can make a real difference and that part of their lives should be devoted to "giving back."

The school features a longer day, mandatory Saturday classes and three-week summer school in July. Its theme is "whatever it takes!"

Eighty percent of the approximately 700 students at the original YES Prep campus, YES Prep Southeast, are from low-income families, and 95% are either Hispanic or African-American. Most students enter the school at least one year behind in math and English, but 85% of YES Prep students are also the first in their family to be college bound.

Founded in 1998, YES Prep is a charter, open to all students, no admissions tests. The school requires each student to take at least one college-level class in order to graduate. The school also requires each student to apply to, and be accepted by, at least one four-year college or university. The campuses have four alumni who have graduated from YES Prep and returned as instructors, two from Stanford, one from Columbia, and one from the University of Houston.

Seventy-eight percent of YES Prep alumni have graduated or are still enrolled in a four-year college, compared to the national retention average of 50% for all ethnic groups and 22% for low-income students. YES Prep students have been accepted in 216 colleges and universities around the country, including schools such as Yale, Georgetown, Brown, Columbia, University of Pennsylvania, Stanford, Rice and University of Texas at Austin, and collectively,

YES students have earned over $17.5 million in scholarships and financial aid.

Barbic and many other YES staff have been involved in the "Teach for America" program. In 1995, Chris earned Houston Independent School District's Outstanding Young Educator Award, an award given to the district's best teacher under the age of 29. "These are mission-driven folks who believe in what we're trying to do in getting low-income kids through college," Barbic said of his staff.

STEP Program in Anoka

Anoka-area teenagers like Samantha, Luke, Matt and Jessica help explain why Governor Pawlenty has a terrific idea: every Minnesota student should complete a year's worth of college before graduating from high school. "Now wait," some say, "many students are not ready or eager for traditional colleges and universities."

Absolutely agreed. But Anoka's STEP program is a marvelous model for youngsters not inclined toward traditional college work.

Ginny Karbowski, STEP director, explained that the program began five years ago when the Minnesota State Colleges and Universities system recommended closing Anoka Technical College (Karbowski). Local leaders and educators argued that ATC was very valuable, but they knew the school must attract more students.

Anoka-Hennepin School District, ATC, and the county joined together: The college provided land, the county provided $8 million for a new building on the college campus, and the school district provided faculty.

These details don't matter much to Samantha, 18. Like many people her age, Samantha, "wanted more freedom, more hands-on learning." She is full time at STEP and earning college credits as she takes courses like law enforcement and emergency medical careers. Samantha has earned a first responder certificate and is working on an emergency medical technician certificate. Both will allow her to enter fields that pay well above minimum wage. She calls STEP, "an awesome program."

Luke, 17, is a senior who was looking for a "change of pace and a chance to learn much more about music." He praises a freshman career class at Anoka High School that visited STEP. Luke knew STEP was for him. He's learning much more about both the performing and business sides of the music industry. He is in a band and plans to use STEP's lessons after high school graduation.

Jessica, 17, is intrigued by machining. She praises her STEP teacher, who helped her get a job at Digital Tool and Automation,

where she's learning much more than "if I were flipping hamburgers." Jessica loves the "hands-on learning and the college environment" at STEP.

Matt, 18, is another student who has already benefited from STEP. He's intrigued by printing and graphic design, so his STEP teacher helped him land a paid internship at General Litho Services. "Before I came here, I was just sitting in high school classes, not sure why I was there or where I was heading." Now Matt is earning money, picking up valuable skills, and planning his future. He intends to work at a graphics firm and perhaps start a company of his own.

Programs like Advanced Placement, International Baccalaureate, College in the Schools and Post Secondary Options are terrific for some youngsters, but STEP serves hundreds of high school juniors and seniors "in the middle," as Karbowski puts it. They can attend STEP full or half day. Governor Pawlenty has urged more "Rigor, Relevance and Relationships" for high school students (Pawlenty). STEP is a great illustration of his vision.

Schools described earlier in this article, including those immediately above, offer models on which we could build. As the Minnesota Principals task force noted, "We know from the experience of following the progress of our graduates that too many students start postsecondary careers but do not finish them. This is why our eyes must be on the prize of postsecondary *completion* for all" (sic, Future of High Schools Task Force, p. 3).

Minnesota might well learn from the New Schools Venture Fund, a national group that has identified and helped replicate outstanding public schools around the nation. While the fund has invested tens of millions of dollars with encouraging results (see NewSchools.org), it does not currently operate in Minnesota. Conversations with one of the leaders of this fund suggest that the fund sees other states as a higher priority in which to operate (Peyser). However, that does not prevent Minnesota from establishing such a fund. After all, venture funds exist in the private sector. Why not the public sector?

Priorities in Early Childhood Education

Finally, a brief comment about changes in the system of early childhood. For more than two decades, researchers have been pointing out the benefits of high quality early childhood programs, especially for students from low-income, limited English-speaking families, and students who have some form of disability. However, *advocates* of various early childhood programs have promoted the idea that every dollar spent on early childhood education has a

multiplying benefit. This is *not* necessarily true.

For example, in August 2007, University of Minnesota researchers released a major report on 20 years of follow-up for participants in a high-quality program geared toward children from low-income families in Chicago. The researchers concluded that by the time they reached adulthood, graduates of an intensive early childhood education program for poor children showed higher educational attainment, lower rates of serious crime and incarceration, and lower rates of depressive symptoms than did non-participants in the program (Reynolds, Temple, et. al 2007). "This study provides evidence that established early educational interventions can positively influence the adult life course in several domains of functioning" (Reynolds, Temple, p. 9).

The researchers asked a key question: "Why does the CPC intervention promote enduring effects on health and well-being?" They concluded:

> Four program elements seem paramount. First, a system of intervention is in place beginning at age 3 years that continues to the early grades. ... A second key feature is that as a public-school program, all teachers have bachelor's degrees and certification in early childhood education. Well-trained and well-compensated staff are common for programs demonstrating long-term effects. Third, instructional activities address all of the learning needs of children, but special emphasis is given to literacy and school readiness through diverse activities. Finally, comprehensive family services provide many opportunities for positive learning experiences in school and at home (Reynolds, et. al p.9).

They also concluded "…the intervention effects are most likely to be reproduced in urban contexts serving relatively high concentrations of low income children" (Reynolds et. al p. 9). One can argue with these conclusions, but they do *not* constitute a blanket endorsement of all early childhood programs.

Here's how others presented the information. The Minnesota Child Care Resource and Referral Network issued a press release with the headline "Study shows pre-school pays for itself." The press release text asserted, "The findings, which appear in this month's issue of the *Archive of Pediatrics and Adolescent Medicine*, a peer-reviewed journal published by the American Medical Association, are the first to affirm the long-term value of a large public early-childhood enrichment program."

The study does *not* say, "Pre-school pays for itself." It does

not affirm the long-term value of a large public early-childhood enrichment program. The study *does* affirm the value of, as the quotations above indicate, programs with certain key features, operating in "urban contexts serving relatively high concentrations of low income children." .

In a *TC Daily Planet* article, John Fitzgerald of Minnesota 2020 (a self-described progressive, non-partisan think tank) described the Reynolds research. Fitzgerald wrote that "The study shows that children involved in pre-school programs … had higher rates of school completion and four-year college attendance … significantly lower rates of felony arrest and incarceration, etc. etc."

Fitzgerald concluded, "As this study demonstrates, early childhood development is crucial to the future of our society … It's time for Minnesota state policy to follow the data. Early investments pay off" (Fitzgerald).

As careful readers note, Reynolds et. al. did *not* make such blanket assertions. They cited a particular high-quality program for a certain group of students.

Professor Susan Neuman of the University of Michigan has tried to insert some critical nuance into the debate about early childhood education programs. She wrote recently:

> Far too often preschool programs for low income children have provided too little instruction, at too slow a pace, for too short a time to create any demonstrable effects in the long term. This situation stands in stark contrast to the instructional models of highly effective demonstration programs frequently cited as the rationale for pre-kindergarten initiatives (Neuman, pp. 288).

She continued, "To get the best return on this investment (in high quality pre-kindergarten programs), we need to think more strategically about the components. … High quality compensatory programs should include the following features: Sufficient time … precise targeting, thoughtful focus, accountability for results" (Neuman, pp. 289-290).

Early childhood advocates often cite the work of economist Art Rolnick. But a careful reading of Rolnick shows he recognizes all early childhood programs do not have the same impact: Referring to the variety of early childhood programs offered in Minnesota, he writes, "It is unlikely that participation of high-needs children in a lower cost, less comprehensive program demonstrated the results available in a part- to full-day, long-term program … . We contend that funding for ECDPs (Early Childhood Development Programs)

should reach the level of model program status, such as the Perry School Program, since this is the level at which high returns have been demonstrated" (Rolnick and Grunewald, p. 7).

As Minnesota considers investments, it needs to be careful to follow the data and experience. All early childhood programs are *not* equally effective. All programs do not have the same impact. *Some* early investments pay off.

Concluding Observations & Recommendations

A new public education system is needed in Minnesota — one based on:

- Higher expectations of public education in Minnesota;
- Recognition that too many children of all races are not succeeding in the current system;
- Greater use of readily available models to adapt and adopt, that have been considerably more successful than many current schools.

This paper suggests that among the key steps Minnesota should take are:

- Fully funding high-quality early childhood education programs for all students from low-income and limited English-speaking families.
- Use of multiple measures to help Minnesotans assess progress in achievement, graduation rates, and readiness for some form of post-secondary education.
- Adoption of state-wide requirements for all students to participate in some form of youth community service at least once during their elementary, middle and high school years.
- Expectation that 95% of Minnesota students will enter and graduate from some form of post-secondary education program, either two- or four-year, within six years of graduation from high school.
- Creation of an "Education Venture Capital Fund " to help school districts and charters adapt and adopt proven models from around the country.
- Expectation that virtually all students will take some form of post-secondary level course prior to high school graduation.

We should seek more than higher test scores, graduation rates and college completion rates. As members of a democracy, we need

schools that will work harder to help more young people learn why they should help work for a better world, and how they can succeed in doing this.

References

Accomando, Laura, unpublished reports on 7 Minnesota High Schools. Minneapolis: Center for School Change (available on CSC website, www.centerforschoolchange.org

ACT, "ACT High School Profile Report, The Graduating Class of 2007 – Minnesota, Iowa City: Author, 2007, available at www.act.org/news/data/07/pdf/states/Minnesota.pdf

American Youth Policy Forum, *Some Things do make a Difference for Youth*, Washington, D.C, author, 1997.

American Youth Policy Forum, *More things that do make a difference for Youth*, Volume II, Washington, D.C: 1999.

Barbic, Chris, interview with author, July 2007.

Collins, Michael, *By the Numbers: State Goals for Increasing Postsecondary Attainment*, Boston: Jobs for the Future, February 2006.

Corwin, Zoe B, and Tierney, William, G, *Getting There and Beyond: Building a Culture of College-Going in High School*, Center for Higher Education Policy Analysis Rossier School of Education University of Southern California, January 2007, available at www.usc.edu/dept/chepa/working/Getting%20There%20FINAL.pdf

Cushman, Kathleen, *First in the Family: Advice about College from First-Generation Students*, Providence: Next Generation Press, 2005.

Fitzgerald, John, "Early Ed Study Reveals Impacts, Benefits, TC Daily Planet, August 30, 2007, www.tcdailyplanet.net/node/6296

Furco, Andrew, "Advancing Youth Academic Success, School Engagement, and International Leadership through Service Learning," in National Youth Leadership Council, *Growing to Greatness, 2007*, St. Paul: National Youth Leadership Council, 2007, available at www.nylc.org/rc_downloaddetail.cfm?emoid=14:701

Future of High Schools Task Force of the Minnesota Association of Secondary School Principals, in partnership with the University of Minnesota's Consortium for Postsecondary Academic Success, *The Bridge to Higher Learning*, author, June, 2007.

Johnson, Sharon, interview with the author, June, 2007.

Karbowski, Ginny, interview with the author, April, 2007.

Klas, Barbara, "President's Column," *MSBA Journal*, November/December2006.

Lerner, Jennifer Brown, and Brand, Betsy, *The College Ladder: Linking Secondary and Postsecondary Success for All Students*, Washington: American Youth Policy Forum, 2007.

Lincoln, Abraham, "Annual Message to Congress: Concluding Remarks, December 1, 1862, available at showcase.netins.net/web/creative/lincoln/speeches/congress.htm

Minnesota Department of Education, *Taking Minnesota Students from Nation Leading to World competing: Setting a course for Success in the 21st Century* (Roseville, Minnesota: author, April, 2007, p. 27).

Minnesota Minority Education Partnership, *2006 State of Students of Color,* St. Paul: author, 2006.

Minnesota Office of Higher Education, *Minnesota Measures: 2007 Report on Higher Education Performance*, St. Paul: Author.

Minnesota Office of Higher Education, "College Readiness and Participation," Web-report found at www.ohe.state.mn.us/mPg.cfm?pageID=1066

Minnesota State Colleges and Universities, University of Minnesota, *Getting* Prepared: A 2005 Report on recent high school graduates who took Developmental/remedial courses, author, August, 2005, www.mnscu.edu/media/publications/pdf/gettingprepared05.pdf

Murnane, Richard, and Levy, Frank, "Why Money Matters Sometimes,*" Education Week,* September 11, 1996, pp. 48-36.

Nathan, Joe, "Challenge Helps Promote Creativity,*" Rural Minnesota Journal,* January 2006.

Nathan, Joe, Accomando, Laura, and Fitzpatrick, Debra Hare, *Stretching Minds and Resources: 20 Years of Post Secondary Enrollment Options in Minnesota*, Minneapolis: University of Minnesota Humphrey Institute of Public Affairs, December 2005.

Neuman, Susan B, "From Rhetoric to Reality: The Case for High-Quality Compensatory Prekndergarten Programs," *Phi Delta Kappan*, December, 2003.

Pawlenty, Governor Tim, *State of the State Speech*, January 2007.

Peyser, Jim, conversation with one of the authors, September, 2007.

Reynolds, Arthur, and Temple, Judy, Suh-Ruu, Ou, Robertson, Dylan, Mersky, Joshua, Topitzes, James, and Niles, Michael D., "Effects of a School-Based, Early Childhood Intervention on Adult Health and Well-being A 19-Year Follow-up of Low-Income Families," A*rchives of Pediatrics & Adolescent Medicine,* August 2007.

Rocha, Elena, and Sharkey, Amanda, "Education: The State We're In…An Education Report Card for the State of Minnesota, Washington, D.C: Center for American Progress and Institute for America's Future, August, 2005, www.americanprogress.org/issues/2005/08/b995593.html

Rolnick,Art, and Grunewald, Rob, "Early Childhood Development: Economic Development with a High Public Return*," FedGazette*, December, 2003, pp. 6-11).

RMC Research, "Public Achievement 2005-2006 Evaluation Brief," Denver: Author, n.d.

Schultz, Nate, email to the author, August, 2007

Sohmer, Rebecca, Jackson, David, Katz, Bruce, Liu, Amy, and Warren, David, *Mind the Gap: Reducing Disparities to Improve Regional Competitiveness in the Twin Cities,* Washington, D.C: Brookings Institution Metropolitan Policy Program, 2005.

Street Stewart, Elona, and Mariani, Carlos, "Letter for Board President and Executive Director, in Minnesota Minority Education Partnership, *2006 State of Students of Color,* St. Paul: author*,* 2006*.*

Superintendents of Minnesota's Promise, "Minnesota's Promise: World Class Schools, World Class State, Minneapolis: University of MinnesotaConsortium for Post-Secondary Academic Success, September 2006.

Tierney, William C, Colyar, Julia E., Corwin, Zoe B. *Preparing For College: Building Expectations, Changing Results*, Los Angeles: Centerfor Higher Education Policy Analysis, Rossier School of Education University of Southern California, available at www.usc.edu/dept/chepa/documents/publications/CollegePrep.pdf

YES Prep! Website: www.yesprep.org

Performance Management: Improving and Sustaining Performance in Rural Hospitals

Terry J. Hill

A financially stable hospital is crucial to a community's health as well as its economy, especially in rural settings. Local hospitals not only provide residents with essential health care services, they are also a major employer and help fuel the local economy.

Today, however, many of this country's 1,600 small rural hospitals struggle to maintain financial stability and respond to the growing demands for health information technology and documented quality outcomes. Historically, these small hospitals have encountered obstacles that are both intrinsic (related to the hospital and its immediate environment), and extrinsic (related to broader reimbursement, policymaking and regulatory issues). Hospital associations and policy makers and researchers have generally focused on the extrinsic factors affecting rural hospital performance, and much less attention has been paid to the intrinsic factors. Opportunities for huge breakthroughs in rural hospital performance lie in effectively managing this intrinsic set of factors. This paper will outline strategies and frameworks for overcoming the intrinsic obstacles and establishing sustainable health systems for the future.

Comprehensive Performance Improvement is Key

While quality improvement is as important in a small rural health care facility as it is in a larger urban center, commitment to quality improvement can be undermined by the crisis management orientation of many small hospitals today. These very real, very urgent crises include financial shortfalls, loss of physicians and other key personnel, new demands for information and privacy, ongoing staff shortages, and increasing competition from urban-based health systems. The crises, combined with lingering questions about local quality of care, have often resulted in an erosion of community confidence in the local providers and out-migration for care to larger,

urban-based health centers. Lost to the local community are not only dollars for healthcare but also dollars for other local businesses.

The inter-relationship of the rural hospital's challenges suggests the need for a clear vision and a comprehensive set of strategic initiatives. Improving clinical outcomes in a rural setting, for example, requires the monitoring of other performance-related factors that can directly or indirectly affect clinical quality, such as level of staff training, adequacy of equipment and facilities, and internal business and clinical processes. Therefore, a comprehensive rural hospital performance improvement initiative should include quality improvement as a vital component, but should also include financial improvement and work force strategies, methods of interacting with its community and customers, as well as attention to organizational architecture and culture. Seen in this broader context, performance improvement must be broad-based and sustainable, and must catalyze rural hospitals to make the profound changes necessary to be competitive in the new consumer-driven era.

Performance Improvement Initiatives in Rural Hospitals

The Minnesota Rural Hospital Performance Improvement project, funded by the Minnesota-based Blandin Foundation, and a companion project in the Mississippi Delta region, funded by the federal government, have brought technical assistance and performance improvement support to more than 90 small rural hospitals in nine states during the past five years. Evaluation results indicate these programs have strengthened participating hospitals and have helped ensure citizen access to needed health care services.

Employing a comprehensive on-site performance assessment process, highly skilled consultants have examined each hospital's finances, business processes, clinical services, medical practices, operations and organizational architecture. In addition, they have assessed the market service area and conducted structured conversations with community representatives to determine community attitudes and community health needs and preferences. The assessments have then been packaged into a comprehensive report, providing information for strategic planning and identifying opportunities for improvement in financial, clinical and operational performance. Finally, the consulting teams have helped hospital leaders develop strategic plans with goals, objectives and action strategies to carry out the initiatives.

At the conclusion of these performance improvement processes, the hospitals have reliable information to make decisions, as well as step-by-step plans for the future. They also have some internal momentum and enthusiasm for moving forward.

As time passes, unfortunately, many rural hospitals lose their momentum and fail to achieve the potential improvements identified by the consulting teams and outlined in their strategic plans. Real life shows up with its many complexities, crises occur, and hospitals divert energy and focus away from their strategies and onto the brush fires of the day.

Barriers to Strategy Execution

Numerous management studies have documented the failure of organizations to carry out their strategies. According to Kaplan and Norton, Harvard-based scholars, in their book, "The Strategy-Focused Organization," fewer than 10% of effectively formulated strategies are successfully implemented. Other management studies have placed the success rate of organizational strategies at between 10% and 30%. Research in this area has suggested a number of significant barriers to strategy execution. Paul Niven discusses these barriers in his book, *Balanced Scorecard: Step by Step*. The barriers include:

- Vision Barrier: Only 5% of the typical workforce understands the strategies and, therefore, are not aware of their role in implementation;
- People Barrier: Only 25% of managers have incentives linked to strategy (e.g., performance appraisals, bonuses, or other rewards);
- Resource Barrier: Less than 40% of organizations link their budgets to strategy; and,
- Management Barrier: Only 15% of executive teams spent an hour or more a month discussing strategy at their meetings.

According to the researchers, these barriers lead to the failure of between 70% and 90% of all organizational initiatives and are the chief cause of executive dismissal. Like New Year's resolutions, strategies became the good ideas and the positive intents that never quite happen. They are included in expensive strategic plans that gather dust on CEOs' shelves and are little known within the organization. Consequently, strategic planning loses credibility and momentum and often becomes little more than a loose guideline.

Poor strategy execution, then, rather than inadequate strategy development, is the cause of most organizational failures. An organization can have the best possible information, employ the best possible strategy advisors, and produce the best possible strategic plan, yet the strategies may still fail. The key, according to

the management experts, is execution. And consistent execution, it appears, depends on using an appropriate system to manage the strategies.

Using a football team as an example, a coach can gather volumes of information about the strengths and weaknesses of the opposing team, can design outstanding plays for his own team and can even have athletes that are better than the other team's. Still, his team will lose if the players cannot execute the game plan. This execution requires extensive communication and understanding of the game plan, as well as aligning the entire team around an efficient execution of the plays.

Rural hospitals, given their diverse roles and meager resources, have historically struggled with strategic planning and strategic management. Lacking internal strategic planning and management/ business expertise, and staffed largely by generalists, hospitals have relied on outside consultants to do much of this work. Generally, rural hospital planning takes place every two or three years at best, and sometimes not at all. Strategic plans are rarely shared with staff and are frequently shelved until the beginning of the next planning cycle. The barriers discussed earlier are all characteristic of the majority of these small hospitals.

Strategy Management is Key

To ensure sustainability of performance improvement efforts in rural hospitals, a "framework" and a "system" for strategy management must be present. Using performance management tools and processes developed and refined in other industries, such as the Balanced Scorecard, hospitals can sustain their performance initiatives despite turnovers in leadership, periodic crises, and financial shortfalls. They can also drive strategy awareness down through the organization, making strategy everyone's responsibility. Ideally, these tools can help hospitals create a culture of change that will be needed to achieve future clinical and operational excellence.

According to Kaplan and Norton, effective strategy management systems have at least three distinct dimensions:

1. **Strategy.** Making strategy the central organizational agenda, and ensuring discussion at all meetings;
2. **Focus and Alignment.** Making every resource and activity in the organization align with the strategy; and,
3. **Organization.** Providing the logic and architecture to establish linkages across departments and employees.

Large hospitals have used these strategy and performance

management systems for years, with a mixed track record of success. The complexities and diverse cultures of these larger institutions have limited progress and slowed implementation of systems designed to facilitate change. Rural hospitals have been slow to embrace this relatively new management technology, but the potential for benefit and rapid deployment is great because of their smaller size and complexity.

Balanced Scorecard and Other Strategy Management Systems

Today more than half of the Fortune 1,000 companies in the United States use Balanced Scorecard technology to manage strategy and implement change. This management system was created by Robert Kaplan and David Norton of Harvard Business School in a series of articles and books. It has evolved from a performance measurement system in the mid 1990s to a performance improvement and performance management system in this century, and has demonstrated its effectiveness in numerous management studies. For example, in a recent study, 97% of business respondents using the Balanced Scorecard technology reported success in their last major organizational change, while only 55% of the organizations not using the Scorecard indicated success. There is also a growing body of evidence in the health care industry that Balanced Scorecards build and sustain value. St. Mary's-Duluth Clinic in Minnesota, for example, attributes a significant financial turnaround to the Balanced Scorecard, and St. Luke's Health System in Missouri used the technology as a tool to become the first health care organization winner of the prestigious Malcolm Baldridge Quality Award.

Today rural hospitals in more than twenty-five states are using some form of Balanced Scorecard technology. Hospitals such as Falls Memorial in International Falls, Minn., used it to accomplish a complete financial turn around, while more than 60 hospitals in Kansas and Nebraska are participating in statewide Balanced Scorecard initiatives designed to improve quality and profitability.

Another performance management system used in rural hospitals is the Studor Pillars, which was presented by Quint Studer in his book, *Hardwiring Excellence*. Like the Balanced Scorecard, this system has primarily been used in large market venues, where considerable value has been documented. No outcomes to date have been documented for rural hospitals using either of these systems, but both show promise of providing focus, improving quality and financial performance, and managing strategy.

The following is a brief description of the performance management systems currently used in rural hospitals nationally. Any of the these systems can be used successfully by rural hospitals, but they all require enlightened leadership, dedicated resources and organization-wide commitment to achieve successful implementation.

Balanced Scorecards and Strategy Maps

Robert Kaplan and David Norton, the architects of the BSC technology, created both a measurement system and an effective, understandable model of organizational strategy. Recognizing the rapid evolution of value from tangible to intangible assets and the need to measure predictors of future success, Kaplan and Norton designed a management tool for the 21st Century.

The Balanced Scorecard offers a simple framework for describing organizational strategies to create value. It has four major perspectives.

- Financial performance, in the first perspective, provides the means for hospitals to fulfill their community mission. "No margin," obviously leads to failure of that community mission. This circumstance has been, overwhelmingly, the largest single reason for hospital closure. It is also apparent that financially troubled hospitals have difficulty sustaining internal quality improvement efforts, implementing needed technology, and recruiting and retaining staff. In addition, failure to access needed capital to make improvements erodes community confidence and diminishes patient satisfaction.

- In the second perspective, successful service to customers and community offers a direct causal linkage to financial success. By assessing and meeting the health services needs of its community, a hospital can fulfill its mission and provide value to its customers. The "customer" or "community" sector of the Balanced Scorecard measures the lagging outcome measures of customer satisfaction, retention and market growth. Particularly in non-profit settings, community and customer value becomes the central element of strategy.

- Continuously improving internal clinical, operational and business processes, in the third perspective, creates

the value recognized by customers and the community. These improvements lead directly to better clinical outcomes, safer environments, and more satisfied patients. The performance of internal processes is also a leading indicator of subsequent improvements in market share and financial growth.

- Learning and growth objectives in the fourth perspective build intangible assets and are a primary source of sustainable value. They describe how the staff, technology and internal culture combine to support execution of the strategies. Improvements in "learning and growth" are lead indicators for success in service and product quality, as well as customer satisfaction and financial performance.

Objectives in each of these four perspectives can be linked together in a cause-and-effect relationship in an organization's "strategy map." This one-page depiction of organizational strategies provides an easily accessible alternative to the old strategic plan. The strategy map, with an accompanying balanced scorecard, becomes the means of communicating strategy throughout the organization, the basis for board and leadership agendas, and a benchmarking system for measuring progress toward strategy execution. It also provides intense organizational focus as well as an effective framework for strategy management.

Studer Principles

In his book, *Hardwiring Excellence*, Quint Studer presents a performance management system based on five pillars of excellence and nine fundamental principles. He states, "The journey to being a world class organization begins with a firm and measurable commitment to excellence." The pillars provide the framework for achieving this excellence.

Studer's Pillars include: (1) Service; (2) Quality; (3) People; (4) Finances; and (5) Growth. A sixth pillar, "Community," is sometimes used by rural hospitals that have implemented the system. The pillars are the strategic framework for the system, and individual strategies, initiatives and measurements fall within the framework.

Studer also developed nine fundamental principles to drive his system. They include:
  • Commit to excellence in:
    o People;

- o Service;
- o Quality;
- o Finance; and
- o Growth.

Studer initiatives in rural hospitals are designed to create a culture of excellence, where leaders and staff aspire to goals far beyond the industry standards. Rural hospitals have historically spent a great deal of time collecting data and information and very little time using the data for constructive purposes. In other words, staff collects information and passes it on without knowing why it is collected, and leaders receive the data and fail to act upon the information. Studer suggests eliminating wasteful data collection and gathering the right information for decision-making and for performance measurement. He prescribes the following:

- *Build a culture around service.*
  In the new consumer-driven era, outstanding service leads to customer loyalty and creates value. In rural hospitals, this will generally build upon a key strength.

- *Develop leaders.*
  Investment in leadership development will be essential for long-term rural hospital success. Lack of leadership training and succession planning often leads to major crises and breakdowns in hospital performance. Distance and web-based education present excellent opportunities for leadership growth.

- *Focus on employee satisfaction.*
  The impending shortage of health care workers and the high cost of staff turnover supports intense focus on employee satisfaction and retention of personnel. Recent studies also indicate that patient satisfaction is highest when hospital staff appear happy and work as a cohesive team.

- *Build individual accountability.*
  Studer contends that this includes both measurable accountability for work assignments and individual accountability for fulfillment of hospital strategies. This speaks to the need for individual performance evaluations to build in perspectives on contributing to the strategies of the organization.

- *Align behavior with goals and values.*
  Clarification and communication of organizational values
  and goals provide parameters for hospital employee
  behavior. It is also related to staff satisfaction and retention
  of employees.

- *Communicate at all levels.*
  Goals and strategies should be communicated to all hospital
  staff using multiple methods, including charts, educational
  events, and written materials. Employees should feel
  empowered to identify system breakdowns and to suggest
  improvements.

- *Recognize and reward success.*
  Recognizing and rewarding employees that contribute to
  customer service and strategic success will drive strategic
  awareness throughout the hospital. This can be done
  through a variety of cost-effective methods.

In some hospitals, the Balanced Scorecard and Studer Principles
have been combined to create a hybrid product. Early indications
are that the two systems are generally compatible and that the use of
both may provide additional value to the organization.

Lean Six Sigma

Lean Six Sigma is a technology based on the Toyota production
model. Its goal is to create a culture of empowerment and
improvement that drives inefficiencies out of both internal and
external processes. The results are intended to be fewer defects,
greater efficiency and reduced costs. To be "Lean" is "to provide
what is needed, when it is needed, with a minimum amount of
materials, equipment, labor and space."
There are five principles of Lean Thinking:

1. Define value from a patient perspective. This will be of
   particular value in the new "consumer-driven health care"
   era and should be a part of the hospital culture;
2. Identify the entire value stream for each service and product.
   Documenting a value stream creates an understanding
   across the hospital of what is necessary to improve the
   organization's services;
3. Make value-creating activities flow by eliminating waste.
   This is particularly applicable to saving time for both
   providers and patients in the health care setting;

4. Let the patient pull the service or product. This patient-centered approach may vary from the traditional, somewhat paternalistic, practice of directing the patient to services the health care provider deems appropriate; and,
5. Pursue perfection through high-performance teams. This means that everyone is striving to improve, work silos are forbidden, and everyone in the hospital has a responsibility for quality.

Lean Six Sigma helps to ensure the sustainability of a hospital's performance improvement initiative over time. Providers that adopt the framework will pursue improvements in financial performance, patient satisfaction, quality of care, process speed and process variation. The approach has at least four basic elements:

- Strategic Vision--aligning the process improvement initiatives to the overall business objectives;
- Cultural Acceptance--treating the process improvement methodology as a belief system;
- Quantitative Analysis--utilizing a set of tools to do quantitative analysis of information; and,
- Process Improvement—utilizing an array of process improvement methods to address issues and obstacles faced by the organization.

Lean thinking has been successfully applied in many rural hospitals to improve quality and create a safer environment. It provides an important framework for continuous quality improvement. When applied organization-wide, it has the potential to create motivated workers, increase patient safety, increase customer/patient satisfaction and improve financial performance. Lean Six Sigma can also be used in combination with the Balanced Scorecard as a tool to improve internal processes and would be highly compatible with the Studer technology as well.

Basic Components of a Rural Performance Management System

Webster's Dictionary defines a "system" as "a regularly interacting or interdependent group of elements forming a unified whole." As economically fragile, crisis-oriented organizations operating in an era of profound changes, rural hospitals require a systems approach to achieving and sustaining widespread performance excellence over time. The critical elements in such

a rural hospital system are outlined below. The assumption is that these elements are interdependent, and that a failure in any one area can have an adverse impact on the other elements and a resultant reduction in overall hospital performance. To use a familiar expression, the organizational "chain" is only as strong as its weakest link.

1. A Performance Framework.

Performance management frameworks have been described briefly in the narrative above. Whichever framework chosen — Balanced Scorecard, Studor Principles, Lean Six Sigma, or any other — must be embraced by top leadership, board and eventually staff. The framework will provide the mechanism for imbedding the system in the organization, will ensure a holistic strategic outlook, and will provide an early warning as to breakdowns in key performance areas.

2. An Empowering Culture

The successful rural hospital culture of the future will be change-oriented, customer-focused, collaborative and designed to maximize staff retention. These attributes are directly related to rapidly escalating health industry changes, pay-for-performance rewards for customer satisfaction and increasingly demanding patients, mounting demands for expertise and cost efficiencies, and shortages of key hospital staff. This culture will require investments of staff, time and money, and should be measured periodically to ensure progress.

3. Ongoing Staff and Board Education

The increasing complexity of the health care industry, the intense demands for documented quality outcomes and the new skills required in a knowledge-based economy will severely tax the capabilities of most rural hospitals. While access to outside expertise is essential for some of this support, new skill sets will be necessary for core hospital staff and leadership. Information technology adoption, for example, requires extensive education and skill building in smaller hospitals, which are staffed by older and less computer-literate staff than their urban counterparts. Since most of this education will not be available to rural hospital staff locally, a great many of the educational modules will have to be provided though the Internet.

4. A Fully Staffed and Skilled Workforce

The current and impending shortages of key health care providers and technicians are well documented. Physicians, nurses,

pharmacists, therapists, medical technicians, dentists and mental health professionals are already in short supply, with predictions of even greater shortages in the future. The successful hospital of the future will make ongoing investments in its current staff and will carry out strategies to recruit and retain skilled and motivated employees.

5. Ongoing Process Improvement
In response to payer and customer demands for quality outcomes and transparency, rural hospitals must adopt a culture of continuous improvement. Hospital employees must see service organizational excellence and patient safety as a personal responsibility, and they must be empowered to suggest and carry out actions for improvement. Incorporating systems such as Lean Six Sigma will provide a structure for this ongoing improvement.

6. Comprehensive Leadership Development
The key to designing, building and maintaining each part of this performance management system will be enlightened hospital leadership. This starts with the board of directors and CEO and includes upper and middle management, medical providers and informal leaders. Again, distance learning and specially designed rural leadership programs may be necessary to supplement what may be available on site.

7. Technology
Thoughtful, strategic investments in a wide range of technology will be crucial for rural hospitals. This includes health information technology and medical technology, but also includes management and systems technology. Timely investments in systems technology will insure that investments in other technology will produce maximum value.

8. Participation in Partnerships and Networks
Rural hospitals will be compelled to seek resources and expertise from multiple sources. One of the best strategies for building collective volume and gaining efficiencies is through participation in networks. Either as a part of a larger vertical health system or as a member of smaller horizontal networks, rural hospitals will require supportive partnerships to survive. This is of particular importance in the implementation of health information technology, where community partnerships and regional partnerships will be necessary for cost-effective implementation.

9. Access to Capital

The myriad investments described above will require significant access to capital. Such access has been facilitated by Critical Access Hospital reimbursement, which allows for the pass-through of capital costs on the Medicare cost report. The reimbursements, in turn, have led to a more positive bottom line. Outstanding financial performance and a sound business plan, however, will also be essential to capital acquisition in the future.

10. Access to Outside Technical Expertise

When Lou Holtz was hired as the new coach of the Minnesota Gophers in the 1980s, he was met with a barrage of questions by sports reporters at his first regularly scheduled press conference. "Will the new coach," they queried, "keep alive the tradition of using Minnesota boys exclusively on the team?" This tradition had once produced superior results and national championships, but for the past few decades, the team and their devoted fans had suffered through one losing season after another. Holtz's response has relevance to small communities everywhere: "Our goal will be to maintain the values, heart and soul of our outstanding Minnesota boys, but we may have to bring many of the arms and legs in from out of town." Because they are small and local expertise is incomplete, rural hospitals will need to have easy access to expertise in business, quality, education, capital, and many other areas. They must work to preserve their community values and use staff and local expertise where appropriate, but they will also need to confer with national and state experts from time to time. Investments in this type of expertise will prove an essential cost of doing business.

Conclusion

Rural hospitals face severe challenges in the years ahead to respond to increasing federal and payer mandates for documented performance. In the new customer-driver health era, rural hospitals will be compelled to improve and document their performance, as well as respond to increasingly demanding health care consumers. Gaining access to performance information (both internal and external) and designing strategies to meet the expanding demands will not be enough to achieve success in this new era. Performance management technology will also be necessary to produce desired outcomes and align the organization behind the strategies. The performance management systems outlined above present promising alternatives for rural hospitals, but formal evaluations of their effectiveness are generally lacking. More documentation of outcomes

is needed, but rural hospitals cannot afford to wait until all of the research is concluded. As Will Rogers remarked, "Just because you're on the right track doesn't mean you won't get run over if you just sit there."

References

Niven, Paul, "Balanced Scorecard, Step-by-Step", John Wiley & Sons, Inc. 2002.

Kaplan, Robert and Norton, David, "The Strategy Focused Organization", Harvard Business School Press, 2001.

Studer, Quint, "Hardwiring Excellence", Studer Group, LLC, 2003.

A Chicken in Every Pot and Broadband to Every Loon: Are Ubiquitous Broadband Connections Necessary for Prosperity in Rural Minnesota?

Katie Johnson

It's the 4th of July. My toes are buried in the sand on the shores of one of northern Minnesota's beautiful lakes and I'm spending the week doing all-American things with my family: grilling burgers, waterskiing, and lighting fireworks. And thanks to today's technology, I'm checking e-mail and weather forecasts on my Treo™ phone.

My tech-savvy brother-in-law is along on this trip, and he dug his toes into the sand next to me as he asked what I was doing "working" on my vacation. Explaining that this was good, "quiet" writing time for an article on the future of broadband from a rural telecommunications industry perspective, he quickly responded, "It *is* the future, don't you think?" He works from his home near Fergus Falls selling GPS technology to golf courses nationwide, so from his perspective broadband at his rural home is necessary for him to succeed. He asked, "How can anyone survive, much less thrive, in today's marketplace without it?"

Most people would agree. The benefits of broadband to students, businesses, tourism, agriculture, healthcare, economic development and even retirees are easy to quantify. But when the rubber meets the super-highway, issues of infrastructure costs, consumer demand, market-based competition and government's role in regulation make the future outlook for ubiquitous broadband fuzzy at best.

According to the Rural Broadband Coalition, "While the Internet is changing the world economy, technology experts say, 'large parts of rural America are losing out on jobs, economic development and civic participation' because of inadequate access to the Internet."[1] Can Greater Minnesota afford to miss out on these opportunities?

The invention of more bandwidth-intensive applications will continue to drive the consumption of broadband access. But will consumption and demand ever equal the cost of providing service

to the state's rural areas? Doubtful. If not, how can we ensure access to every user who wants and needs to use the current and future inventions of broadband?

From a rural telecommunications industry perspective, this article is an examination of a few questions that may lead us to some middle ground … or least a glimpse of it.

1. Can and should broadband access be available ubiquitously across the state?

2. What will the real broadband needs of rural Minnesotans be in the future?

3. What type of technology and infrastructure can best meet those future needs?

4. How can/should the access network be paid for?

1. Can and should broadband access be available ubiquitously across the state?

When you live in a rural area, there are tradeoffs you willingly accept, trading some aspects of "city life" for the benefits of living out-state. But should access to broadband be part of this trade-off?

Most of us who live here don't think so. While some of our metro citizens may be inclined to disagree when asked whether their money should support "universal service," they're also the first to complain when their smart-phone or laptop can't connect during a trip to the lake. Because we all share the natural resources of this great state, let's put aside the rural vs. urban argument early. Even though it's impossible to say location is irrelevant when it comes to access, the goal is to make it as irrelevant as possible in terms of benefits to everyone.

Another factor quickly becoming irrelevant is cost. Until after World War II, only the affluent (and chicken farmers) could manage the proverbial Sunday chicken. Today, thanks to modern production methods, almost anyone can afford this versatile fowl – a so-called "chicken in every pot" like Herbert Hoover once promised. Broadband prices have taken a similar path. While prices were significantly higher than dial-up even just a couple years ago, many Internet providers now offer 256k connections at dial-up rates thanks in large part to video deployment within their networks. Affluence is no longer a pre-requisite where broadband service is available.

However, the factor that remains a fundamental obstacle from a rural perspective is how to physically get service to everyone, and whether or not we really need to. The rural independent telephone companies in Minnesota, who serve half of the land
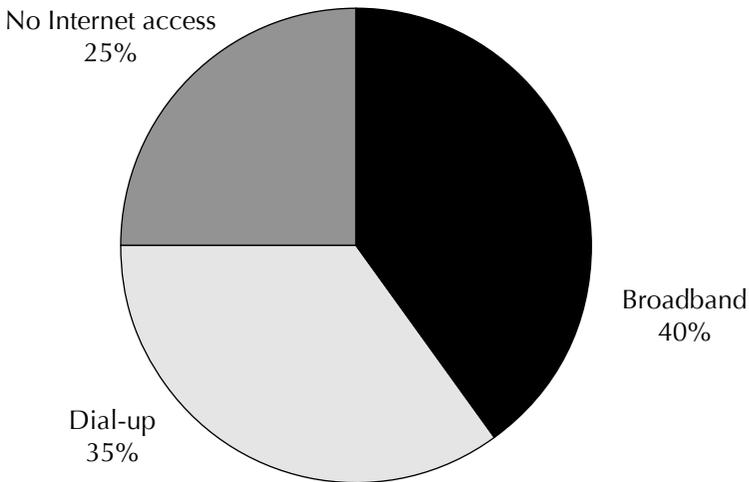
Figure 1: *National rural broadband penetration rates.*

mass of the state, have made significant investments to deploy broadband to some of the most remote corners of the state. Even seasonal cabins on remote islands of Lake of the Woods have access to broadband Internet. According to the Minnesota Association for Rural Telecommunications (MART), since 2000, Minnesota's rural independent telephone companies have invested more than $300 million in new technology. Over 90% of access lines served by these companies have broadband, high-speed Internet available to them.[2] Nationally, 40% of rural customers subscribe to broadband connections[3] and in Minnesota the percentage is right on the national track, coming in at 39.7%.[4] According to the Center for Rural Policy and Development's *2006 Minnesota Internet Survey*, the remaining 60% is split between 35% who have dial up and 25% who have no Internet access at all. One-half of that group is expected to come on-line or upgrade to broadband in the coming year.[5]

Of those who don't have broadband access, only 22% of rural Minnesotans cite availability as the reason. Cost and "don't use often enough to warrant additional costs" are the top two reasons. Those customers will migrate as costs continue to lower and applications continue to advance.

As FCC Commissioner Robert McDowell recently noted, consumer demand will force network operators to provide fatter and faster pipes. But according to McDowell:

> Consumers don't buy fat pipes; they buy applications
> and content that requires fat pipes. As consumer demand
> for more bandwidth-intensive applications and content
> increases, so does the incentive for network owners
> to provide more bandwidth, provided the market is
> competitive and unencumbered by unnecessary regulation.[6]

The rural telecommunications industry agrees. However, demand alone won't change the fact that there are some remote customers who will remain a challenge to reach with broadband for the foreseeable future.

This brings us back to the 22%. This is equal to about 192,000 Minnesota households who don't have broadband because they do not have access to it. MART members are diligently working to reduce that number each year. But Minnesota will soon be at a point where communities that are not viable for competition and are served by larger, regional carriers who do not invest as readily in rural areas will be the last of the have-nots. Rural providers believe 700 MHZ and other wireless technologies are on the horizon as feasible solutions for these areas, but lack of equipment and standards will require more time for them to materialize.

As nearly every aspect of daily life plays out on the Web, people who use dial-up will be left out. I witnessed this firsthand when a friend who lives in a rural serving area of a large regional telephone carrier came to me desperate to use the computer connection at my home to apply for college and student loans. The dial-up connection available at their home simply couldn't handle it. Left out or disadvantaged when trying to apply for college isn't a standard Minnesota should accept for some of its rural residents.

So, is it realistic to expect broadband access ubiquitously across the state? The numbers arguably say "yes." Looking solely at demand for services due to new and advancing applications, all indications are that nearly everyone everywhere will have a reasonable need for broadband access.

2. What will the real broadband needs of rural Minnesotans be in the future?

Future expectations are for high-speed connections to allow consumers to bypass their cable systems and someday click on an NBC, HBO or Fox Sports Web site and watch their favorite shows or teams in high-definition whenever they want. Someday, people will routinely have open video connections to their relatives' homes, allowing them to sit in their own living rooms and chat.
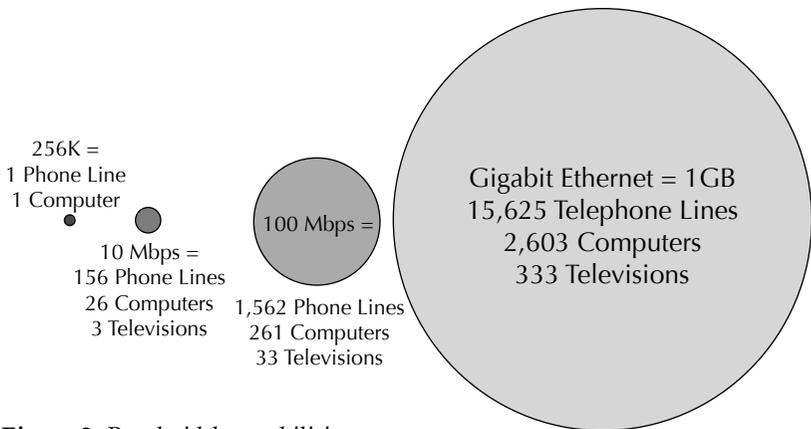
Figure 2: *Bandwidth capabilities.*

Or connections to their lake homes allowing monitoring and remote access to everything from the heat to the coffee maker. For business settings, small wireless sensors will send constant streams of data to people monitoring conditions from miles away. Think of the possibilities. Doctors could oversee a diabetic child's condition even if the patient was at summer camp. Tele-mental health — the provision of mental health services from a distance using telecommunications technologies — has the potential to help surmount the challenge of mental health professional shortages by delivering services to primary care clinics, hospital emergency rooms, community mental health centers, schools, churches, nursing homes, jails, and state and federal prisons. These are real possiblities for the future and they represent real bandwidth needs. But how much, how soon?

Recent talk about legislation mandating one-gigabit (Gb) service to all Minnesotans by 2015 raises the question of how much is enough? A gigabit is most likely over the top for any time in the foreseeable future. Even early adopters of applications like those mentioned above don't begin to approach needs for a "gig" of bandwidth, not to mention the substantial cost implications. Including everything from infrastructure investment to customer premise equipment, the Minnesota Telecom Alliance (MTA) and MART have researched this topic and calculate cost predictions of over $10 billion to ramp every Minnesotan up to a one Gb connection. Even Herbert Hoover would have a hard time making that a promise.

The word "mandate" is what concerns the rural industry when it comes to broadband legislation. Rural providers have proven time

and again that they can and will respond to their customers. They continue to increase bandwidth when their customers demand it. In fact, virtually every one of Minnesota's independent telecom companies is providing at least one megabit (Mb) of bandwidth for data — that's at a minimum three times faster than the fastest speeds available just a few years ago, and in some cases it has gone up 20 to 30 fold. Almost three-quarters of customers served by MART companies are provided broadband service over fiber within the local exchange network. One-third of MART companies are providing many of their customers broadband service with fiber all the way to their home or business, and this is anticipated to jump to one-half by the end of the 2008 construction season.[7]

Delivery of video services over the telecom infrastructure is the major driver behind bandwidth increases for much of our rural landscape. For today's video applications "enough" bandwidth isn't a gigabit, but it is more than traditional data applications would call for. About 22 Mb to the home is a minimum requirement for delivery of the "triple play" of television, data and voice. Add video on demand and high-definition TV along with the possibility of wireless applications, and 100 Mb isn't unrealistic for the future. The market forces of video, whether by traditional cable television delivery or via web sites, will continue to drive bandwidth delivery to rural and metro homes alike. The delivery mechanisms to offer these bundles of services are the basis for rural providers' future planning and deployment.

It's worth noting these future applications will drive some real customer premise needs as well: wiring within a home, computers, TVs, routers, modems, set tops, wireless networks. All of these will factor into the customer experience of broadband utilization. Consumers and contractors alike will need education for wiring and purchasing in this new generation of communications and entertainment.

3. What type of technology and infrastructure can best meet future needs?

Myriad competing technologies are able to provide the bandwidth required to deliver broadband services, from fiber, copper, and coax to wireless and satellite. It can be tempting to use technology as a goal, but it is more useful to look at it as a strategy to meet a defined need. Each technology has its limitations in terms of bandwidth, reliability, cost or coverage. Choosing which will best meet an area of need depends on the type of user being served, the

Technology	Advantages	Disadvantages
Fiber - FTTx	Highest Bandwidth Quality Signal Reliability Security Dedicated Connections	Standards (user interfaces) Cost Proprietary Networks
Copper/ xDSL	Utilizes existing lines Dedicated Connections	Distance Sensitive Speed/Bandwidth limits Age degradation
Wireless	Cost Ease of Deployment Mobility standards	Terrain & foliage limits Proprietary Networks CPE & Interface standards not developed Shared Connections
Coax	Utilizes existing lines	Shared connections
Satellite	Ubiquity	Lower speeds than DSL, Coax & Fiber Weather interference

Table 1: *Technology comparison.*

type of services or applications desired, required bandwidth and the geographic density of the customer base.

Without delving into a long debate on the merits and demerits of each, it is safe to say no single technology will serve the full set of rural Minnesota consumer needs. Table 1 offers a brief comparison for overview purposes. However, one would be remiss not to mention that fiber offers almost infinite bandwidth relative to the other technologies and is becoming economically more palatable. The ultimate bandwidth capability, high reliability, security, and low operation costs of fiber-to-the-home systems coupled with the new affordability of both fiber and equipment is driving further deployment of fiber in more and more markets. That's good news for all Minnesotans.

4. How can or should the access network be paid for?

A study by the Broadband Working Group at MIT's Communication Futures Program found that among 22,390 ZIP codes, communities with broadband access recorded greater growth in jobs, businesses, and property values. The report said communities with broadband access experienced an additional

1% to 1.4% in their job growth rate between 1998 and 2002. Those communities also saw an added 0.5% to 1.2% growth rate in the number of businesses. Housing rents, measured as a proxy for property values, were more than 6% higher in 2000 in communities where broadband was available by 1999.[8]

With that in mind, can we afford to build systems for ubiquitous access? Or can we afford not to? Will market forces be enough to fund this ubiquitous access? Due to vast expanses of remote and often rugged or wet topography, we all know the short answer is "no."

As companies who are based in rural Minnesota, deeply rooted in their local communities and committed to delivering telecommunications services to fellow Minnesotans each and every day, the rural telecommunications industry believes "no" isn't a sufficient answer. These companies are seasoned experts at finding ways to ensure that all consumers have access to affordable telecommunications services and the latest technologies — no matter where they live — because they live there, too. As providers experience the loss of more and more customers on the traditional POTS (Plain Old Telephone Service) network, the broadband pipe is essential to both the consumer and the provider. The broadband pipe delivers the possibility for retention and profitability of the rural network. Simply put, it is the future of the network. And the integrity of the network is vital to everyone — Voice Over Internet Protocol (VOIP), wireless, and virtually every telecommunications application old or new utilizes the network in place today. It's fundamental to maintain this state-of-the-art network.

As mentioned earlier, market-forces alone simply will not fund maintenance or build-out of a network capable of providing broadband access to the remaining remote and un-served parts of our state. So collectively, as consumers, providers, businesses, non-profits, and government agencies, how can we make it a reality? To see progress, at least three items are needed: collaboration, market-based competition, and common-sense regulation.

While collaboration and competition in the private sector may sound counter-intuitive, they are in large part the reason we have the level of connectivity available today in rural Minnesota. But let's be clear from the start – it's not about collaboration within individual sectors. Collaboration is necessary amongst a wide array of entities. Among private-sector providers, for instance. This state has a vast fiber optic network of over 15,000 miles[9] and impressive regional-optical networks thanks to collaboration between dozens of local exchange carriers. Another example of collaboration is

between government and the private sector. Instead of government competing against local companies who have invested heavily in infrastructure, people and real estate, consumers win when governments collaborate with the private sector to provide needed services whenever possible.

Common sense regulation may be even more counter-intuitive than the previous statement, but it is essential. The Federal Universal Service Fund (USF) was built on the principle of ensuring reliable access to affordable telecommunications services for millions of U.S. consumers in high-cost to serve areas. This type of regulation was built on common sense and has served our country well for decades. However, some not-so-common sense decisions are threatening its integrity and viability. Since 1999, USF payments to second, third and even fourth telecommunications providers in the same geographic area increased by an average of 185% annually, from $500,000 to $820 million.[10] This exploding growth is due to provisions that allow wireless providers to collect from the fund on the "identical support rule." This means regardless of their own cost to serve a customer, wireless providers in an area receive USF money based on the often-higher cost of the original wire-line telephone provider, who may also be providing service to that customer. So now two companies are drawing money from the USF for providing service to the same customer, and one of them is drawing at inflated costs. This is not-so-common sense.

While not-so-common sense regulation can be extremely detrimental, commonsense regulation from both the state and federal level can be beneficial to consumers and can help put us back on track for ubiquitous, reliable access to affordable telecommunications services.

Some argue that broadband service should not be added as part of the Universal Service obligation. Considering that video is one of the major drivers of broadband deployment, should the right to digital television be an entitlement that state or federal government should fund for all residents? Not if they're using common sense. However, applying common sense, there should be a way to separate the broadband delivery mechanism from the content that rides on the broadband connection. Then it can make sense to include broadband as part of the USF funding obligation.

It's also important to recognize there is no longer a cable television industry *and* a telephone industry. These industries have merged. They provide the same services. Rules for entry and operation in the merged marketplace, where both traditional telephone companies and cable television companies are providing

the same types of services, should be fair and absent of unreasonable barriers to entry. Inconsistent rules only impede the achievement of enhanced competition and accelerated broadband deployment.

Several states are moving broadband development up on their priority list of policy initiatives. California is one such state. Acknowledging that state industry rules were

> [a] "legal straitjacket from a by-gone era, in 2006 the California PUC enacted the Uniform Regulatory Framework (URF), granting more freedom to incumbent telephone carriers to respond to market forces, invest, and innovate. Continuing to regulate landline telephone companies as if they were still monopolies with an iron grip on the communications market is a policy mistake that may cost states billions in lost capital expenditures and infrastructure upgrades."[11]

Telecom providers are often hesitant to endorse government programs or approaches to industry issues, but unless private-sector providers and governments can work together and truly focus on the un-served, these pockets of our state will continue to lag behind and become the have-nots of this century.

With a common goal of statewide broadband access in mind, effective public-private collaboration will focus on maximizing the infrastructure and resources already deployed in our state, expanding the reach and capacity of broadband services offered, and educating consumers on how to capitalize on the benefits of their high-speed connections. On the other hand, effective public-private collaboration will not abandon existing investments or infrastructure and it will not make assumptions regarding preferred technologies or providers.

This collaboration between a public & private "meeting of the minds" may or may not conclude that a state universal service fund or similar mechanism is ideal or even necessary. Such a funding mechanism may be the answer to those un-served pockets of our state, but that determination cannot be made intelligently without a wide-angle look at the entire state and the full slate of providers and services available. This topic must be researched, applying the collective intellectual resources of all stakeholders to develop a common-sense approach to statewide access. It also must look at the balance between the benefits of such a program and the burden involved in successfully administering a program that adequately measures evidence of need, appropriate expenditures and program

compliance.

Government entities have the unique opportunity to be drivers of both access to the network and applications on the network. By acting as an anchor-tenant and utilizing network infrastructure for the bandwidth-heavy applications that governments tend to have, they make access to the public better and more affordable. By offering consumers access to their services via the network for things like on-line licensing, billing and tax payments, they increase demand for broadband.

In addition, governments have the opportunity to foster healthy competition for services by endorsing fair and progressive economic development policies, franchise agreements, rights-of-way usage and other policies. Why not provide state income tax credits to telecommuters and students for broadband costs? This demand-side stimulus has worked well in other areas of public policy. Another stimulus to broadband usage would be to change the State Building Code for residential construction to require wiring capable of broadband delivery.

As concluded by the authors of the February 2007 Pacific Research Institute study of municipal wi-fi networks:

> Officials at every level of government should turn their energies towards spurring greater deployment of advanced communications in free-market ways. Major potential policy actions include 1) reducing the red tape of video franchising and repealing state communications laws that hinder private investment, and 2) fostering future innovation and the next generation of telecom technologies.[12]

FCC Commissioner Robert McDowell summed up good broadband policy in a recent commentary, "Broadband Boloney," in *The Wall Street Journal*:

> When it comes to broadband policy, let's put aside flawed studies and rankings, and reject the road of regulatory stagnation. In the next few years, we will witness a tremendous explosion of entrepreneurial brilliance in the broadband market, if the government doesn't micromanage. Belief in entrepreneurs and a light regulatory touch *is* the right broadband policy for America.[13]

So, rather than *mandating* ubiquitous access and exorbitant speeds, legislators and policy makers could quit micromanaging and better

spend their time determining how they can "reduce the red tape" and "reject the road of regulatory stagnation" to help provide the tools needed to keep high-cost, un-served areas on pace to receive the same services market forces continue to drive in other parts of the state.

When it comes to paying for statewide broadband access, suffice it say there isn't a single answer. Collectively, all stakeholders share responsibility in what they can and should do, as well as what they shouldn't do, to advance the cause.

In Summary
- Ubiquitous access is a desirable goal with quantifiable benefits to the entire state.

- Bandwidth demand will continue to grow with the applications and content that users need to work and play at the speed of life. So far in Minnesota, where broadband is available, bandwidth continues to increase based on demand without government mandates.

- No single technology is the broadband silver bullet. Standards for 700 MHZ and other wireless applications aren't there yet, but wireless solutions are on the horizon. Fiber-to-the-home is gaining ground thanks to lowering costs. A good assessment of the user being served, the type of services or applications desired, required bandwidth and the geographic density of the customer base is necessary to choose the best technology for a given area.

- The cost of ubiquitous access is daunting. Both the public and private sector have a role in making it a reality by maximizing the resources we have today, remaining technology neutral, collaborating to identify solutions for areas of need, promoting market-based competition and utilizing common-sense regulation.

With those conclusions in mind, where does the rural Minnesota telecom industry stand on making progress toward universal broadband access in our state happen? I believe I can speak for my fellow colleagues in saying we stand ready to continue our commitment to our communities and neighbors. We stand on-pace and often ahead of the curve compared to our metro-based cousins in terms of deployment and services, with no plans to slow down. We stand firmly in support of the benefits of healthy, market-based

competition. And we stand ready to welcome partnerships with any entity who shares a trustworthy, common-sense approach to making the prosperity that broadband helps deliver a reality for all of our residents — even the loons.

Twenty years seems like an eternity in the telecommunications world. But when I dig my toes into the sand on the beach in 2027, I hope my kids are working in jobs I haven't even imagined possible today, and I hope they can take for granted the access we have in every part of our great state to be in constant, instant touch with our world. I hope that because of it, they can choose to live and work in the beauty and serenity of Minnesota lakes country, too.

Endnotes

[1] Rural Broadband Coalition, "Overview;" available from http://www.rural broadbandcoalition.net/. Internet; accessed 27 July 2007.
[2] Minnesota Association for Rural Telecommunications; available from http://www.mnart.org/; Internet; accessed 27 July 2007.
[3] Cronin Communications, Inc., "2006 Nationwide Research of Rural Consumers," (Washington, DC: 2006).

[4] Center for Rural Policy and Development: "2006 Minnesota Internet Study" (St. Peter, MN: Center for Rural Policy and Development), 3.

[5] Cronin Communications, Inc.

[6] Robert M. McDowell, "Luncheon Address," Broadband Policy Summit III (Crystal City, VA), 7 June 2007.
[7] Minnesota Association for Rural Telecommunications.
[8] Carolyn Y. Johnson, :Towns Left Scrambling for Broadband," (Boston Globe: 18 July 2007).

[9] Minnesota Association for Rural Telecommunications.

[10] Federal Communications Commission, "2006 Monitoring Report," (Waashington D.C. Government Printing Office), 3-14.
[11] Sonia Arrison, Ronald Rizzuto, and Vince Vasquez, "Wi-Fi Waste: The Disaster of Municipal Communications Networks." (San Francisco: Pacific Research Institute, 2007), 38

[12] Sonia Arrison, Ronald Rizzuto, and Vince Vasquez, "Wi-Fi Waste: The Disaster of Municipal Communications Networks." (San Francisco: Pacific Research Institute, 2007), 37

[13] Robert M. McDowell, "Broadband Baloney" (Wall Street Journal, 24 July 2007), A15.

The Potential for Open Access Networks in Minnesota: A New Community-Based Approach

Bernadine Joselyn & Gary L. Fields

Current Broadband Status

The increasing importance of broadband telecommunication service as an essential component of community infrastructure has become well documented. Furthermore, broadband has been available long enough to quantify its economic impact, including through comparisons of communities that have the service with those that do not.[1] Today the question facing rural communities is no longer, "Do we need broadband?" Rather, the question is how to ensure that the broadband infrastructure we need for the future is built to deliver the most good to the greatest number of people.

While many institutional broadband users such as universities, hospitals and large businesses have developed their own broadband solutions capable of delivering 100+ megabits-per-second speeds in both directions (download and upload), the broadband speeds offered to homes and businesses by most local networks are much lower.[2] This range of service meets the Federal Communications Commission's (FCC) definition of broadband (200 kilobits per second in one direction), but falls short of international standards, which generally hover around 50 megabits up and down (synchronous). This higher speed is required to support the emerging services and applications necessary to compete successfully in the new global economy.

At this time, only fiber optic cable is capable of reliably delivering the higher speeds required to support the future information economy. These speeds are widely available in the fiber networks in Northern Europe and the Pacific Rim, where service providers also are able to deliver these higher speeds at lower costs than we currently pay for slower service in the United States. These lower costs and higher speeds are associated with:
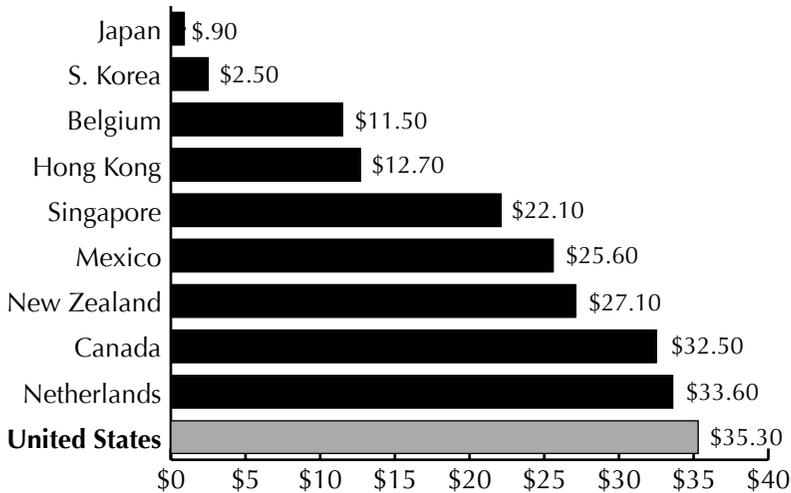
Figure 1: *Relative broadband cost per megabit.*

- Higher density populations and housing construction (i.e. Japan, Korea).
- Public subsidies and investment (Korea, Singapore, Sweden).
- Higher usage rates (the United States currently ranks in the mid-teens internationally when measuring the number of broadband users per thousand people).[3]

The greater bandwidth delivered over fiber networks stimulates entrepreneurial development and implementation of a wide variety of innovative services and applications through:

- Attraction and support of technology-based employers
- Attraction of "creative workers" who attract higher paying employers
- Increased efficiency and productivity of local government
- Improved competitiveness of local businesses
- Development of new services and applications that require the use of high-bandwidth infrastructure and can be delivered close to the markets where the services are use

America's current speed and price lag in telecommunications service comes at a cost. The United States, historically a leader in Internet development, has lost its technology edge. Our nation as a whole, and rural areas in particular, are falling behind in

Type	Optimal speed (Mbps)		Common service		Primary issues
	Download	Upload	Download	Upload	
Dial up (V.90)	.056	.336	Varies	Varies	Wire quality
xDSL ADSL ADSL2+ VDSL2+	.256 to 8 .256 to 24 12 to 250	.064 to 1.02 .064 to 3.5 12 to 250	3 18 30	.256 2 10	Length of copper wire portion, marketing
Cable (DCOSIS) Version 1.0 Version 2.0 Version 3.0	38 40 160	10 30 120	3 8 n/a	1 2 n/a	Number of users per coax loop, marketing
Wireless WiFi (802.1lb) WiMax (802.16e) EVDO Rev.A (cell)	11 70 3.1	11 70 1.8	2 3 1.5	1 1.5 .5	Legacy support and interference from buildings, trees, etc.
Fiber EPON (802.3ah) GPON	5.6 to 1000 2400	5.6 to 1000 1200	10 30	10 30	Marketing

Data compiled by Eric Lampland, Lookout Point Communications, May 2007.

Table 1: *Relative broadband speeds (megabits per second).*

broadband penetration and utilization rates, as well as in a number of other technology-related indicators. The United States' ranking in broadband usage has slipped from 4th to 15th from 2004 to 2007.

The Market Approach: Leaving Rural Behind

No federal strategy is currently in place to build the broadband infrastructure of tomorrow or close the broadband gap between America and our global competitors. The Bush administration has set a goal of universal Internet access at 200 kilobits per second, a standard far below international measures and unsupported by any implementing strategy. Absent any federal effort to address this competitiveness gap, the task of redressing America's alarming decline in broadband competitiveness has been left up to incumbent service providers who have few incentives to invest in major upgrades to broadband infrastructure[4] because:

- Customers are not yet demanding higher bandwidth, in part because — as in the chicken and egg dilemma — they are not familiar with high bandwidth-dependent applications that can't be deployed over existing networks and

- Service providers generally can continue to get acceptable returns from their existing infrastructure

Fiber to the Home (FTTH) deployments are expensive ($1,500-$4,000 per household[5]) and yield little additional revenue from the customers who utilize this higher bandwidth infrastructure, in spite of the higher value that it delivers. Consequently, the only FTTH deployments under way tend to serve higher-income, high-density areas (such as in Verizon's largest urban market areas) or those that are receiving some kind of public investment. Clearly, market forces alone will not solve the investment problem for rural areas in particular. The relevant policy question is: "How can we most effectively structure public investment, and stimulate private investment, to ensure that Minnesota's rural and urban communities have the telecommunication infrastructure needed to survive and thrive in the global economy?"

Open Access Networks: A New Approach

The financial and policy challenges of increasing broadband capacity in the United States are not that different from those faced by many of our global competitors. Many of them, especially in Northern Europe, have similar economic and demographic characteristics and also have similar incumbent monopoly or duopoly (telephone and cable television) service providers that resist new models that bring increased competition. Policy makers in many of these countries recognize that increasing bandwidth is critical to future economic success. They view telecommunications infrastructure as similar to other public infrastructure, like roads, water and electricity, and have begun to explore innovative investment models. Direct public subsidies to individual service providers (like the Rural Utility Service funds) can accelerate infrastructure deployment, but do nothing to increase competition. In fact, direct subsidies and private ownership of infrastructure exacerbates problems that result from a monopoly.

The solution in some countries has been the creation of public-private partnerships to develop local Open Access Networks.[6] Primary drivers for public sector involvement vary, but according to the World Bank[7] the most often cited reasons include to:

- Improve the availability and affordability of broadband Internet services
- Lower the cost of providing municipal services

- Increase government efficiency and productivity
- Promote local economic development and competitiveness (including by facilitating an increase in the number of specialty niche service providers that can operate on the networks, i.e. telemedicine, video conferencing, data backup, home security, etc.).
- Redress "digital divide" concerns and promote quality of life and quality of place

Not only do Open Access Networks lend themselves to cross-sector collaboration, their corporate governance structure helps ensure that they deliver the greatest benefit to the most people. Open Access Networks are intentionally structured to ensure that the benefit and value of broadband is passed on to end users to a far greater extent than is the case under closed public and private sector-operated systems. The World Bank study noted that "the main driver for the development of Open Networks is the fundamental belief in the importance of ubiquitous and affordable broadband access to the economic and social development of the community."[8] In advice to the international donor community, the report concludes "encouraging and financing pilots and scalability projects may reap substantial economic and social benefit."

Open Access Networks are a public-private partnership-based alternative to the existing dominant model in the United States of closed and incumbent-owned and operated networks. Their key features include:

- True broadband capacity: This capacity is likely to be constrained only by the physical capability of the digital hardware/software that is deployed, rather than by some artificially imposed business model;

- Service to a local geographic community as a public utility;

- Corporate governance culture and structure that places emphasis on serving the "common good"; and

- Open access to the network by multiple, competitive service providers (voice, video, data, other).

The most distinguishing feature of Open Access Networks is that they are owned and controlled independently of any service or content that runs over it. This allows anyone connected to the network to take or provide content or service from or to anyone

else on the network. Private companies use the network to provide retail services such as voice (telephone), video (television), data (Internet), or others (home security, backup data storage, remote monitoring, etc.) and pay the network owner a license or lease fee to deliver their services. This is similar to air travel, where airlines pay airport authorities a fee for using the airports, or ground shipping, where trucking companies pay governmental entities license fees for using local roads. Imagine the inefficiency if every airline built its own airport, or if DHL, Federal Express and the U.S. postal service all built their own roads. If they did, the first to build them would have a great advantage over others, and they would not be inclined to share them. Open Access Networks reduce the cost of entry into a business by subsidizing the infrastructure with public investment and then facilitate competition and promote innovation by allowing multiple service providers on that shared infrastructure.

Open Access Network ownership can come in different forms. Some are totally publicly owned by a governmental entity — a country, municipality (or combination of municipalities) or a municipal subdivision, like a municipal utility. Some open networks are owned by public-private partnerships. A FTTH open network in Amsterdam currently under construction is partly owned by a large private real estate company. In the United States, some new suburban subdivisions have privately owned open networks, where the housing developer provides the infrastructure as part of the housing development and operates a private FTTH network.

Barriers to Open Access Networks

Cost: While *wireless* open networks are relatively inexpensive,[9] they generally do not provide the reliability or bandwidth necessary to meet many of the new applications and services available on the Internet.[10] The cost of FTTH networks is much higher, due in part to the added cost of connecting the community to the Internet, which often must be done through "captive" single-trunk lines for which incumbent operators can charge high access fees. It may be difficult to sustain the cost of a new FTTH deployment with revenues from existing voice, video and data services. New networks typically only initially capture 30% to 40% of a market — even if the new services offered are superior to incumbents' — unlike cable television, which tended to capture nearly 100% of new markets when introduced as the sole video service provider. New services that develop to take advantage of open network infrastructure can provide new revenues for the network, but it is difficult to forecast these revenues in a manner secure enough to attract initial infrastructure financing.

As in the case of most of the FTTH deployments in Minnesota, public subsidies, including low-interest loans and federal Universal Service funds, usually are required to help cover initial capital costs. Attracting public dollars to these investments can be challenging, as the necessary public investment in Open Networks must compete for scarce public resources with other critical needs such as schools, roads, water and sewer services. As the need for the higher speed that FTTH deployments deliver increases and the market share of new FTTH deployments increases, it is expected that the need for public subsidies will decrease.

Competition: The vast majority of incumbent voice, video and data service providers are strongly opposed to the emergence of Open Networks. The reason is easy to understand: Open Networks is a very disruptive concept. Some of the core and access technologies central to Open Access Networks (IP-based networks) undermine the business models underpinning the incumbent providers.

Most Minnesota communities are served by a duopoly — an incumbent telephone company and a cable television operator that has expanded to provide the "triple play": voice, video and data services. These incumbent providers face a serious dilemma. They are carrying debt from "legacy infrastructure" (often copper wire) and have difficulty generating the return on investment they need to finance a new FTTH network. New higher-quality infrastructure developed by a new market entrant stiffens their competition.

With the exception of a few Minnesota telephone cooperatives, private telecom service providers are usually reluctant to form partnerships with public entities, even to create a "closed" network. The typical response by incumbent service providers to the few new Open Access Networks in the United States has been to significantly reduce their prices or to use litigation to delay or weaken a new open network provider. Public officials are forced to choose between better broadband infrastructure and protecting incumbent service providers that frequently have made large investments in local infrastructure.

Qwest, the largest incumbent telephone company operating in Minnesota, has declined partnering with or providing retail service on a local open network project in development on the Iron Range. Such a move would require them to abandon their existing infrastructure, and the "stranded investment" option is not an attractive business choice for Qwest. In contrast, the incumbent telephone company in Vasteras, Sweden, home to an award-winning Open Access Network, recently decided to make its services

available over the local open network.

While competition is one of the essential components and qualities of Open Access Networks, the competition fostered as a result of their deployment is not only among providers of the traditional "triple play," video, voice and data services. By its very nature, a system that allows all users to receive and deliver content and services to and from all other users removes barriers to entry for a wide range of new and niche services that can operate on the networks, i.e. telemedicine, video conferencing, data backup, home security, etc.

Regulatory Challenges: The legal infrastructure necessary for Open Access Network development is ambiguous and confusing. In Minnesota, municipalities can provide the infrastructure for open networks under their "implied powers," but explicit authority is lacking. The municipality's authority to provide retail service — not necessary for an Open Network where private entities provide the retail services — is more restrictive. Voice, video and data services were all developed during different times and are regulated differently, even though the technologies all are converging in IP protocols. This regulatory uncertainty undermines the confidence necessary for large FTTH deployments, whether they are public open networks or private closed networks.

Open Access Networks in Minnesota

While a number of Minnesota communities have FTTH deployments, there are no operating Open Access Networks in Minnesota at this time. This may soon change. Twelve communities and one Indian band on the Iron Range of Northeastern Minnesota have entered into a joint powers agreement to explore the feasibility of creating an Open Access Network, called Iron Range Community FiberNet. An initial feasibility study has been completed by Dynamic Cities, the developer and operator of the UTOPIA open network in Utah. Initial projections show that a substantial public infrastructure subsidy in upfront capital costs will be necessary to launch the project. The need for public investment is due to:

- Low-density communities (high infrastructure cost per subscriber)
- High interconnection costs between communities due to large geographic area
- Modest subscriber rates, due to higher than normal percentage of elderly and lower-income residents.

FiberNet is currently looking at finance models for the project, including public and private debt and public and private equity.

Conclusion

Broadband telecommunications has become part of the essential community and economic development infrastructure, following similar progressions that occurred with railroads, highways, electricity and telephone utilities. Just as these earlier utilities were delivered by different institutional models as they matured, broadband will likely be delivered in new ways in response to changes in the scale, technology and other economic and environmental conditions. As the U.S. ranking in broadband telecommunications continues to decline, the importance of examining new approaches increases. Open Access Networks, a model that has emerged in countries that are leading broadband utilization and infrastructure investment, offer a new approach for consideration by Minnesota communities committed to meeting their future telecommunication needs.

References

Localizing the Internet: Five Ways Public Ownership Solves the U.S. Broadband Problem, Institute for Local Self-Reliance, www.newrules.org/info/5ways.pdf

World Bank Study on Open Access, infodev-study.oplan.org/the-study

Measuring Broadband's Economic Impact, MIT/Carnegie Mellon Study, cfp.mit.edu/groups/broadband/docs/2006/Measuring_bb_econ_impact-final.pdf

Digital Prosperity: Understanding the Economic Benefits of the Information Technology Revolution, The Information Technology & Innovation Foundation, www.itif.org/index.php?id=34

Endnotes

[1]Communities with broadband consistently demonstrate higher growth in employment, business establishments, and high tech businesses. See *Measuring Broadband's Economic Impact* under references.
[2] Today, at least 85% of rural Minnesota communities have some service,

down and 128 to 500 kilobits up, according to Broadband Access in Rural Minnesota study conducted in 2003 by the Center for Rural Policy.

[3] See the 2006 International Telecommunication Union rankings at http://www.itu.int/osg/spu/newslog/ITU+Broadband+Statistics+For+1+January+2006.aspx

[4] There are a few notable exceptions to this stagnation in U.S. broadband infrastructure improvement (relative to global standards):

- Verizon has begun a major fiber-to-the-home (FTTH) deployment in its largest markets; no rural areas are on deck to receive these investments.

- A few Minnesota telephone cooperatives, publicly financed by low-interest loans from the federal Rural Utility Service and subsidized by the Universal Service Fund, have installed FTTH in 5-10 small Minnesota communities.

- In Minnesota, a few municipalities, like Windom, have financed and developed complete municipal telecommunications utilities that provide voice, video and data services.

[5] Costs vary due to population density, central office equipment and customer premises equipment.

[6] Open Networks (both fiber and wireless) currently are deployed in Sweden, the Netherlands, Germany, Austria, Denmark, France, Ghana, Brazil, the United States, Canada, Nepal, Philippines, Macedonia, and India. However, Open Networks, especially those deployed over fiber optic cable, remain a relatively new phenomenon; the World Bank estimates there are fewer than 50 such networks worldwide.

[7] See the World Bank report under references.

[8] See the World Bank report under references.

[9] Wireless networks can cost as low as $300 per subscriber, including transmission tower and equipment and the local receiving equipment.

[10] A case in point is the recent recommendation by St. Paul's Broadband Advisory Board that the city explore fiber instead of wireless technologies, its original charge.

What Needs to be Done About Big Broadband

Milda K. Hedblom

The overall focus on "Institutional Change" for this issue of the Rural Minnesota Journal is both needed and admirable. It is frequently observed but no less useful to state that "institutional change" may be something of an oxymoron, but despite that authors have been asked to discuss for several different policy areas "Do we need to substantially change our institutions and/or change the way we do things to succeed in the 21st century?"

Here the question applies to the area of big broadband telecommunications technology and is directed toward several specific queries. First, it raises the question whether provision of big broadband should be considered to be an essential utility in the same way that provision of water, sewer and electrical services are thought to be. Second, if provision of big broadband is considered an essential public utility, should public bodies be able to invest in and operate the networks that provide big broadband in the same way that privately owned companies can do? Third, if fiber optic networks are necessary and public bodies as well as private providers can invest, what ideas might be advanced for models of financing and deployment throughout Minnesota and how might those models be realized?

This brief essay focuses on the second and third questions but with a few initial comments about the first.

It is also necessary to say a word or two at the outset about the term "Big Broadband." The term broadband itself has become a victim of political warfare between broadband industry defenders and broadband industry critics. Without wasting much more energy on that debate, in this essay the term big broadband means network capabilities to each premise of 100 megabits to a gigabit, both up and

down. Therefore, the technology for that network would be fiber optics.

Big Broadband As An Essential Utility

Thinking about whether big broadband technology should be viewed as an essential public utility might be helped by understanding what is meant by the term "public utility."

It usually includes the notion that a public utility maintains an infrastructure for a public service thought to be essential to the public. The public utility organization or company can be privately owned, government owned, non-profit, co-operatively owned or some combination of these. Historically, essential services were often thought of and treated as natural monopolies and public utilities were often regulated.

Historically, U.S. telecommunications firms providing telephone service were treated both at the national and state level as public utilities and regulated on both price and service. Beginning in the 1980s, however, an un-regulation goal took over and the public utility face of telecommunications slipped into the background or was eliminated entirely.

The companies that provided cable television service were not defined as telecommunications companies, so they never fell within the public utility model of regulation, although they were regulated from time to time at the national level by laws specifically directed toward the cable television industry. As technology evolved, however, both telephone companies and cable television companies emerged as providers of Internet services, so both types of companies are part of the equation when we confront current questions about provision of big broadband.

As far as ownership of the companies that provided telephone or cable services, it was mostly private ownership with a modest number of smaller, rural cooperative companies. Public ownership of services could be found in a few dozen Minnesota communities that started local cable services when service was otherwise unavailable or thought too poor. Like the private electrical utilities in an earlier era, both telecommunications and cable television companies have pressed and continue to press the political case that only private companies should provide these services.

Therefore, when the question is asked whether provision of big broadband over fiber optic networks should be considered as an essential utility in the same way as provision of water, sewer and electrical services and whether big broadband investments should be made by cities, one must start with the fact that there is a legacy

of ownership thinking in the political culture which was, and is still today, shaped largely by the dominant influence of private economic interests in the legislative halls, at the regulatory table, and in the lobbying hallways.

Cities Define Big Broadband as Essential Utility By Actions

While most incumbent providers continue to oppose the idea that cities have an obligation or even a right to build publicly owned fiber optic networks or to provide big broadband over those networks, increasing numbers of cities seem to be acting as if they have both an obligation and a right to do just that as may be seen by visiting the American Public Power Association website (www.appanet.org). Inevitably, state legislatures as well as Congress were presented with demands from opponents to limit or forbid public investment in big broadband networks.

Fourteen states have such limits or barriers to entry (see www.baller.com for detail). In Minnesota, the chief such barrier is a requirement that cities wishing to construct a local exchange to deliver local telephone service must hold a local referendum and pass it by 65%. Since most cities that do construct a fiber optic network will aim to have the three major services of telephone, television and Internet over that network, they will most likely find it necessary to hold a referendum on the question of a local exchange. The 65% requirement is so much higher than called for in most legislative action that it is widely seen as a barrier to entry. The rising view that big broadband is as necessary as water, sewer and electricity is perhaps best reflected in the very intensity of efforts at state and federal levels to legislate against municipal entry to broadband investment and provision of services. As long as cities see themselves at an economic disadvantage nationally and internationally from the absence of big broadband on fiber optic networks, they will continue to seek to provide for themselves what they believe is necessary for their long-term community welfare. In a practical way, every fiber build by a city is a statement that big broadband is as necessary as water, sewer and electric public utilities.

If Cities Want To Invest in Big Broadband

If cities want to invest in big broadband they need to understand their reasons. In Minnesota, dozens of cities have engaged in developing that understanding and many more are engaged in that effort now. The reasons advanced have been fairly consistent, including:

- long-term community economic development;
- increased choice of service;
- more affordable broadband;
- wider use of broadband in community services in education, health, senior services, government services;
- support for home businesses and telecommuting;
- competitive advantage in the world economy.

Once cities understand their reasons, what else must they do?

Given the prevailing legacy of ownership thinking, the first task of cities who believe big broadband is an essential utility requiring their investment is the task of political engagement. They will need to convince their politicians that the need to deploy truly big broadband fiber networks to the premise in many — probably most — communities poses an investment problem that calls for fundamental re-definition about public participation in the provision of big broadband services.

The terms of that engagement have already been laid out. The broadband user in the United States pays much more for less bandwidth than in competitor countries, and users have at best two choices for wired broadband service. (Dial-up service does not count as broadband.) The issues are affordability, big bandwidth, choice of service, and access.

The most widely circulated report worldwide is the OECD report which in mid year (June 2007) ranked the United States 15th in the world in broad penetration per capita, down from fourth in 2001 and 12th just six months earlier (www.oecd.org). In response the FCC and industry critics attacked the OECD's methodology (FCC Comm. McDowell, *The Wall Street Journal*, July 7, 2007). A cogent response to that attack was set out in the report called "Shooting the Messenger," by S. Derek Turner, research director of Free Press (www.freepress.net, July 25, 2007).

Economic Basis for Established Provider Resistance

If cities do engage politically and attempt to re-define the scope of public participation in providing big broadband services, they can expect stiff resistance from the established industry. Since telecommunications companies providing telephone and media companies providing cable television were among the first providers of Internet service in Minnesota, they are largely operating over networks that have something other than fiber running to each home or premise. The installed lines to the premise are very often a fully

paid investment and bring handsome returns to the companies right now. On the other hand, installation of fiber to each premise calls for investment that will take a long time to recoup and the volume of usage by most customers on that fiber installation will take time to grow to produce a concomitant higher return on investment. Most private companies are looking for return on investment that takes a shorter time than fiber investment is likely to take, so there is understandable reluctance on the part of many private providers to replace their existing lines with fiber.

The Political Culture Factor

Cities who do engage politically and attempt to re-define the scope of public participation in providing big broadband services can also expect to encounter views ranging from skepticism to opposition about whether cities should compete with private providers at all. There is a strong underlying friendliness in the general political culture toward private business activity, and beyond that there is a strong ideological opposition to the public providing services such as broadband among some. The main challenge for cities will be to demonstrate that the private sector has been invited to make the fiber investment but that if it fails to respond, cities then need to take their fiber investment future into their own hands.

Long-Term Investment — A Major City Asset

The strongest asset among cities who believe big broadband is an essential utility requiring their investment now rather than later is the fact that cities typically take a long-term view in planning for the welfare of the people in their communities. They ask what needs doing today in order to be an economically viable community tomorrow with a good quality of life for all their residents. Cities typically think about twenty years from today and create infrastructure projects that are financed over a fifteen- or twenty-year time span. That mentality and willingness to make a long-term investment in fiber networks is a major city asset. The reluctance of private providers to make the fiber investment today is heavily influenced by the desire to realize a rate of return on investment in a much shorter time span than twenty years.

Ideas on Financing and Deployment

Most everyone in and out of the broadband industry agrees that it would be desirable to have widespread build-out of fiber optic networks to the premise and that worldwide competitive pressures will make that necessary. Beyond that, there is wide difference of

opinion about who should build the networks and provide the services, about timetables and about investment.

If we take as a given that fiber optic networks are necessary and that cities as well as private providers should be able to invest — leaving aside for the moment the clear industry opposition to that assumption — there are threshold questions cities need to address before they move very far down that path. These include at least the following:

- Who will be the users (public users versus city wide commercial users)?
- Will the city build the network and provide the services or will the city build the network and lease the network or run an open platform system?
- What are the primary goals of the community among the likely goals of economic development, choice of service, lower-cost services, local service, faster speed, improved community and public services, quality of life, among others?
- Is the community in a general financial position to contemplate the investment?
- What are the strengths and weaknesses of the existing incumbent services?
- How well prepared is the community and especially how well prepared is community leadership to cope with the resistance of incumbents to the entry of municipal investment and services?
- What is the political culture in the community regarding the legitimacy of municipal ownership and operations?
- Can the political leadership successfully persuade residents that a successful municipally owned and operated business will return excess earnings to the community in the long run?
- What does an independent feasibility study say about likely market success of a city-owned fiber optic network? What services will be offered and who will take them?
- What assets can the municipality contribute to the fiber optic network project?
- How will the municipal network gain access to affordable content for video services if the fiber optic network will be

used to provide telephone, TV and Internet services?

- What sort of operating entity is acceptable to your community, consistent with state and federal laws and appropriate for the provision of the contemplated services?

- How big does the financing need to be?

- Can the municipality rise to the challenge of insulating the day-to-day business operation from political interference while also remaining accountable to the community through the political system?

- Does the municipality have other enterprises with cash reserves who can make loans to the municipality to backstop construction overruns or operating losses during the early years of winning customers and living through two to three years of predatory pricing by incumbents?

Finally, if all these questions — and more — can be answered satisfactorily, the question remains: How do you borrow money to invest in a fiber optic network and to pay the costs of providing services that include not only big broadband Internet but also video and telephone services?

Paying for Fiber Optic Networks

The desire to build fiber networks is strong but no one financial model works for all communities because — among other reasons — not all communities aim to do the same thing.

In Minnesota, some cities have found it possible to fund WiFi wireless build-outs with cash, inter-fund loans from other municipal enterprises, equipment certificates or direct bank loans. But the cost of WiFi build-outs is so much less than the cost of fiber optic networks which go to each premise in the community. And most communities that aim for a fiber optic network try to take it throughout the community — to older and newer parts alike as well as to businesses and public facilities. Therefore, this usually drives the fiber-hungry municipality to the bond market to sell bonds to investors.

A Fork In the Road: General Obligation Bonds

The first fork in the road a municipality will confront is whether the bonds to be issued will be general obligation bonds backed by the full faith and credit of the city and its taxpayers or whether they will be revenue bonds where the risk lies with the private investors.

Confronted with that fork-in-the-road decision, cities are

usually conflicted. The general obligation bond is easiest to place and costs the least in interest rates and issuance cost. However, if the enterprise does not prosper, the municipal budget will be called upon, taxes may increase as a result, and the credit rating may fall, affecting other borrowing negatively. If the municipality prefers to incorporate the general obligation bond into its finance and political picture, some options do exist besides generic general obligation bonds, including general obligation equipment certificates (subject to limitations on amount, term and legal debt limits) as well as general obligation bonds for economic development (not subject to legal debt limit).

A Fork In the Road: Revenue Bonds

If the municipality does not prefer to walk down the financing path with general obligation bonds, then the most likely bond option will be revenue bonds. These bonds will carry a higher interest rate as well as higher costs to issue the bonds. The size of the difference will depend on general market conditions in the first instance, and in the second, on the ability to satisfactorily answer all the detailed questions about the prospective enterprise so the underwriter has a coherent and truthful account to provide to prospective investors.

In today's market climate, the conservative and honest reputation of cities stands them in good stead. The bonds are placed with private investors, who assume the risk that the enterprise will succeed. This requires that a community have an excessively good business case, that it take steps to prevent avoidable legal challenges (such as by holding a referendum on phone service and working very hard to pass it), and that it have sound business operations advice from the very beginning of the project. The placement of the bonds is a negotiated transaction: legal documents will be required specifying how funds, accounts and covenants will be set up by the city, and additional money will need to be borrowed to fund debt service and operating reserves. These requirements and practices are all customary with revenue bonds; cities have used them for a variety of purposes, so it is not a new financial path just for fiber optic networks. Some cities combine the use of revenue bonds with cash contributions, assuming the debt or operating reserve fund obligations or other enhancements. Investors always like to see such municipal contributions, which may make it simpler to place the bonds.

The largest question is whether enough private investors believe that fiber optic networks are a good long-term investment for a community to make. The only way to learn the answer is to test the market.

Other Options

Apart from the fork-in-the-road option of choosing between general obligation and revenue bonds, a couple of other options exist, including lease revenue bonds and the installment purchase contract or lease arrangement. These options may be particularly appealing to the municipality that wishes to invest in the building of the network but does not prefer to provide the services that the network would support. In this case the municipality may lease the network entirely to a private or other municipal provider or it may choose to offer the fiber optic network as an open platform system. The option to wholly lease the system to a third-party provider or to secure providers for an open platform system depends upon the availability and interest of a provider or multiple providers. Evidence so far is that traditional incumbents have little interest in operating over anything other than their own networks, even if in most cases they are not fully fiber to the premise.

Legal Approval of the Bond Issue

There is also a legal hurdle municipalities need to consider when they contemplate walking the citywide fiber optic network path to every home and business. This is the fact that regardless of the type of bonds issued, it is necessary to obtain an opinion from Bond Counsel that the bonds are legally issued and likely to withstand a relevant legal challenge. Apart from the telephone referendum statute previously mentioned, it is the duty of the issuer to demonstrate that it is highly unlikely that a private provider will itself over-build with a fiber to the home (FTTH) project and that the system will be different from services of the current providers. This will mainly turn on the fact of the fiber to the premise deployment rather than fiber to the neighborhood or curb and the intent to provide symmetrical very high-speed Internet services to all premises.

In summary, the financing can be figured out in communities with a reasonable base of resources, but all that goes before resembles a stiff mountain climb. Not all municipalities will want to make or be equipped to make the climb. But for those who do, the prospect is rather exhilarating.

Case Study: Monticello, MN

On September 18, the City of Monticello held a referendum to ask its citizens whether they approved the building of a telephone exchange that would be used to deliver local phone service over a fiber-to-the-home network that is to be built and which will

also provide TV and very high-speed Internet. *The vote was an overwhelming 74% in favor.*

The Opposition Campaign

This result was especially surprising in the face of an intense campaign that attempted to persuade the voters that the network would be financed by city bonds that taxpayers would have to pay off. The opposition offices were located in St. Paul and appeared to bring together every telecommunications provider group on the scene in Minnesota, as well as enjoying the expensive direct mail support from the Taxpayer League with an even more misleading message than those on the opposition web site or appearing in the numerous newspaper and shopper ads. Ads in opposition appeared on the cable TV channel of incumbent Charter Communications and even on CNBC. The CNBC ads startled local residents and led one to write to the city "For cripes sake, we are on CNBC. What do these people want? We are just Monticello!"

There were numerous waves of blanket push poll phone calls. The mayor was a recipient of one of those calls early in the calling sequence and elicited a set of responses from the hapless hired caller which he was able to recount with great effectiveness in the local newspaper and on email distribution. It demonstrated how under the guise of questions the push polls actually misinformed the citizens about the basis of financing and the nature of the network to be built.

The Education Effort and "Vote Yes" Campaign

By contrast the effort by the City Fiber Optics Committee was limited by law to presentation of facts and educational materials and had a very tiny budget when compared to the "vote no" effort. It depended a lot on personal contact and effort, but also on quick post card and email response to the ads that it believed were factually untrue and the misleading claims about the financing for the intended citywide fiber optic network. Independent of the City Fiber Optics Committee, a Monticello Citizens for Fiber was formed and was active throughout the short campaign with lawn signs, community meetings, and personal messaging by phone and email. The efforts by the City Fiber Optics Committee and the Monticello Citizens for Fiber campaign were both mainly grass roots efforts.

Consequences of the Vote

This was the most aggressive campaign yet waged in Minnesota over the question of municipalities entering the fiber optics business.

It came at the end of two years of work by the City. The vote opens the door to the next steps, including financing and engineering the system. Construction is expected to begin next year.

The Path to the Vote

The path to the vote is instructive for the issues raised earlier in this brief review. The relatively small city (about 10,000) of Monticello, lying west of the Twin Cities on Interstate 94, decided to explore the possibility of a fiber to the home network in May 2005. It began by hearing a presentation about the experience of Windom, MN, in building its fiber system and a presentation from this author, acting as an independent consultant from Dain International Services, and Brenda Krueger from Springsted Inc. about possible next steps in technology study, ownership and operations, legal concerns and financing options. That first discussion set the path for the next two years of work.

Formation of the Fiber Optics Task Force

The Council immediately formed a small Fiber Optics Task Force representing main stakeholders in the community. It spent several months educating itself further about fiber to the home possibilities and limits, it compared options and learned about what was happening in other places. The report carried in to the city council in August of 2005 recommended that the council continue the Task Force and direct it to prepare the call for a feasibility study. That study included not only technical analysis, but a market study, as well as an assessment of business operations and regulatory issues in forming a business. The writing of the request for proposal and its circulation led eventually to the award of the contract to CCG Consulting in conjunction with Dain International Services and Springsted Inc. in May 2006 and the completion of the feasibility study by mid September.

Unanimous Council Approval to Develop the Network

On September 25, 2006, the Council took the first of several unanimous votes in support of the fiber optics project. It approved the resolution that the city move forward with the process to develop a broadband fiber optic network to service the entire community for the provision of telephone, cable TV and high-speed Internet to all residents and businesses. The condition attached by the Council was that the network would need to be financed solely by revenues and not by tax levy. The process of developing a plan for the citywide fiber network was to include an education and information program

as well as a second, even more rigorous market study to identify how many in the community were interested in taking services from the network when built.

Consulting Other Cities and Pre-engineering Advantages

The city leadership, the Fiber Optics Task Force and the consultants to the project continued to work together over the next six months to examine the interaction between the ownership and operations models, the business requirements for the varied services, the legal and regulatory requirements and the possibilities for finance. The experience of other successful fiber-to-the-home communities was called upon. Major milestones were visits in March and April of 2007 by representatives from Bristol Virginia Utilities, as well as by Hiawatha Broadband to share their experience. Another major milestone was the completion of a pre-engineering report which was able to refine route expectations and cost estimates sufficient to put a general price tag on the project. That opened the door to selection of a bond house for developing a revenue bond proposal.

Critical Role of City Council

One of the vitally important lessons from the process in Monticello is that city council members need to be kept fully informed all the way along in the process. The leadership from the council is critical and their willingness to continue to fund the exploratory process has to be based on bringing results to the table.

Finances and Bond Issues

The spring and summer of 2007 were occupied chiefly with attempting to clarify the demands of the bond offering. The fact that the Council clearly directed that the effort should be made to finance the network with revenue bonds means that the narrative accompanying the bond placement has to be particularly persuasive as a business case. It also means that additional demands are laid on the bond attorney, who needs to certify the issuance of the bonds. The Monticello approach on financing meant that the bond attorney took a very cautious view about whether a telephone referendum was required. Telephone service could have been initiated by a third party without the construction of a local exchange, but it would likely have undermined the economic case for the whole network. As a result, a decision was taken by the political leadership to call for a referendum. They went to work to win. On September 18, they won.

The critical task of securing investors to finance the system lies

just ahead. The bond market environment is less promising now than it was in early spring and the network will cost more to finance now than it would have then. But receptivity to fiber optics in the investment community is reputed to have warmed with every passing six months. It may be that fiber optics to the home as a "someday" investment has become today's smart move among the sophisticated in the U.S. investment community. If so, we would be catching up to the rest of the world, not leading it.

Conclusions

There are two general conclusions to draw from the Monticello experience. The first has to do with the unreasonable barrier to entry posed by the 65% requirement for a municipality to construct a local exchange. This is widely understood to be a serious barrier to entry. The general argument for such a vote is that a community should have to express its will about broadband ventures in telecommunications which are by their nature quite expensive. Of course, cities make equally expensive decisions without being forced to meet the undemocratic standard of 65% super majority. The other argument offered by opponents of municipal entry is that municipalities should not be encouraged to offer competitive choice in the telecommunications service area. Requiring a 65% majority certainly does discourage municipalities. Sometimes the barrier is overcome (as with Monticello), but sometimes not. In any case, the opponents to the 65% rule attack it as highly undemocratic and point out that it is punitive to cities to have to engage in expensive preliminary explorations to clarify whether, in business terms, there is a viable project and then much later finally test the question of approval for a telephone exchange.

A happy conclusion of the Monticello vote is that a community without an electric utility or a large number of positively pre-disposed high-tech types gradually built up a large base in favor of the "fiber vote for the future" that spelled victory on Sept. 18. If Monticello can do it, so can others.

The second point is not really a conclusion. Instead, it is a possibility. That possibility relates to demonstrating that revenue bond financing is a viable option for building and operating big broadband fiber optic citywide networks. The financial advisors and the bond house are confident the bonds can be placed. When Monticello places its bonds, it should in turn significantly encourage municipalities where taxpayer-backed general obligation bonds are not likely to be approved to think about citywide fiber optic networks. It will be another door open to municipalities, and some

will walk through.

Finally, it should be remembered that this essay was asked to focus on the investment aspect of fiber optic networks. It did not explore the options available for operating the networks after they are financed and built. But it is important to emphasize that cities do have options about how to operate new networks. They might choose to operate the network directly or by contracting with a single provider. Alternatively they can choose to have the network managed in an open platform system. For example, if a community values local ownership and management of operations as well as the prospect of future dollar returns to the community, it will likely prefer the municipal operator option. If the community believes it can attract numerous new providers to start services on an open platform, it may prefer that, but the critical issue — especially for a small community acting by itself — is the inherent limitation of small market size. A small pie cut into several small pieces is unlikely to either attract or sustain numerous providers. In the end there is no avoiding the fact that the investment challenge must be met, since without investment — whether public or private — nothing new under the fiber sun will happen in any community.

About the Authors

TONY FILIPOVITCH is Chair of the Urban and Regional Studies Institute at Minnesota State University, Mankato. In addition to thirty years' teaching, he has also served as President of the Mankato Area Foundation, is a founding member of Citizens' Voices, a grassroots community organization in the Mankato area, and is currently Chair of the Mankato Planning Commission. He has consulted for a number of local government and nonprofit organizations in Minnesota.

GAIL MILLER is currently serving in her eighteenth year as the Renville County Recorder and Registrar of Titles and as a member of the County Management Team. She is the custodian of all Renville county land records and is responsible for recording, indexing, archiving and retrieving all legal documents related to real estate transactions. Miller is the project manager for the Renville County Electronic Real Estate Recording (ERER) Pilot project and has served as the vice chair of the Minnesota ERER task force. She coordinates the publication of the county newsletter distributed three times a year. In addition to her local duties, Gail is currently serving as the Vice Chair of the Association of Minnesota Counties Futures Task Force.

Miller grew up on a family farm in Renville County and attended the College of St. Catherine, where she earned a Bachelor of Arts in Computer Science. Miller worked as systems analyst for Unisys and Health Partners before moving on to county government work. She recently earned a Master of Arts Degree in Organizational Leadership with an emphasis in Strategic Management from the

College of St. Catherine.

Miller serves as a board member for Heartland Community Action Agency. She is a local Girl Scout leader and is an active member of the Olivia Kiwanis Club. Gail is married to Rick and they have two children, Meghann and Rachel.
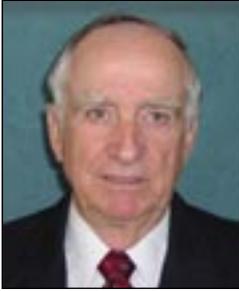
JOE GRABA is co-founder of Education | Evolving, a joint venture of the Center for Policy Studies and Hamline University. E | E works within Minnesota and nationally to help education policy leaders and influencers address both the challenges and opportunities facing 21ˢᵗ century public education. Graba has spent his entire professional life in education and related policy work — as a teacher, teachers' union leader, state legislator, state agency executive and, most recently, Dean of Hamline's Graduate School of Education

JOE NATHAN directs the Center for School Change at the University of Minnesota's Humphrey Institute of Public Affairs. For the past 20 years, Nathan has worked with rural and urban schools and communities, helping them refine their district public schools and establish and improve charter public schools. More than 20 weekly newspapers, including 15 in greater Minnesota, carry his weekly column. Parent, student and professional groups have honored Nathan for his work as a public school teacher and administrator; Nathan has also worked for the National Governors' Association. *USA Today, The Wall Street Journal* and other major papers have published his guest essays. Nathan received his bachelor's degree from Carleton College and his master's and Ph.D. from the University of Minnesota. The Nathans' three children all attended and graduated from the St. Paul Public Schools.

LAURA ACCOMANDO worked as a research assistant at the Center for School Change at the Humphrey Institute of Public Affairs. While working at the Center she contributed to a number of research project. She received her

MA from the Minnesota School of Professional Psychology and is currently a doctoral candidate in Clinical Psychology.

TERRY HILL, MPA, is the executive director of the Rural Health Resource Center, a national, non-profit organization based in Duluth, Minnesota. The Rural Health Resource Center is currently implementing more than a dozen state and national rural health projects, including the Medicare Rural Hospital Flexibility Program's Technical Assistance and Services Center, the Mississippi Delta Rural Hospital Performance Improvement Project, and the Small Hospital Improvement Program.

Hill has more than 25 years experience working with rural hospitals on quality and performance improvement, strategic planning, network development, health information technology, and leadership development. He has written extensively on these topics and has made more than 100 presentations at state and national conferences. Hill also teaches performance management at the College of St. Scholastica in Duluth and has served as faculty on dozens of performance improvement workshops.

KATIE JOHNSON grew up on a dairy farm near Battle Lake, MN, where she was active in 4-H on both the local and regional level. Her first job milking Jersey cows earned her a percentage of her dad's milk check and a real education in hard work, the fluctuations of market-based pay and the marketing efforts of the dairy check-off program. Katie received her Bachelors Degree in broadcasting from Northwestern College in St. Paul. After spending the first several years of her career in radio broadcasting, she has spent the last 12 years in the rural telecommunications industry working for Park Region Telephone Co., a cooperative based in Underwood, MN. She currently serves as Business Operations Manager for Park Region and its subsidiary companies Otter Tail Telcom, Valley Telephone and Otter Com Inc. Katie lives in rural Underwood with her husband and two young children.

BERNADINE JOSELYN is director of public policy and engagement for the Blandin Foundation. Under her leadership, the Foundation

is currently implementing two public policy initiatives: Vital Forests/Vital Communities, and Broadband: Keeping Rural Communities Competitive. Joselyn joined the Foundation in September 2001. A Minnesota native, Joselyn has a master's degree in international affairs and a certificate in advanced Soviet studies from Columbia University. She received her undergraduate degree from the University of Minnesota and a master's degree in public policy from the University's Hubert H. Humphrey Institute. Joselyn served for seven years as a diplomat with the United States Department of State, including assignments in New Delhi, India, and Moscow, Russia. She spent the better part of a decade living and working in Russia, including as Director of the Moscow office of the Eurasia Foundation and Director of the Moscow office of the International Research and Exchanges Board.

GARY FIELDS is the President of Development Strategies and Resources Inc., a consulting organization that assists development organizations in designing and implementing new programs and projects. He is the Project Consultant to the Blandin Foundation, where he assists in the design and implementation of their Rural Broadband Initiative.

From 1997 to 2002, Mr. Fields was the Deputy Commissioner for the Minnesota Department of Trade and Economic Development, where he administered the Business and Community Development Division and was the principal architect of the state's economic development strategy. From 1992 to 1997, Mr. Fields was Vice President with Springsted Public Finance Advisors (St. Paul), where he assisted municipal agencies in designing and delivering financing programs to meet their development objectives. Prior to Springsted, Mr. Fields was a director with the National Development Council (New York), where he worked with national, state and local development agencies and trained over 2,000 professionals in NDC's Economic Development Finance Professional Certification Program.

Mr. Fields has over 25 years experience in economic and community development and has assisted with financing over $1.0 billion in development projects. He has a master's degree from the University of Minnesota and a bachelor's degree from the University of Illinois. He resides in St. Paul.

MILDA K. HEDBLOM offers services as a consultant, lawyer and policy expert through Dain International Consulting and Legal Services to public and private clients with telecommunications and information services needs. As a consultant and lawyer she tends to work in the space where innovation occurs. She works on broadband issues in both fiber and wireless, including community broadband development, entry of new services, and multi-party network agreements, among others. Recent fiber projects include the City of Monticello and the City of Red Wing. Recent wireless studies include the City of St. Paul and City of Winter Springs, Florida. As a policy expert, she is Director of the Telecommunications and Information Society Policy Forum (TISP Forum) at the Humphrey Institute at the University of Minnesota. Recent policy projects include development of the Regional Broadband Task Force, a five county collaboration on broadband development. She has considerable experience at the national level, including at the FCC as well as at the international level. In 2001 and 2002 she held a position as Executive Coordinator of the World Summit on the Information Society, a UN project based in Geneva. She is a professor of politics and communications at Augsburg College, Minneapolis, and of telecommunications policy at the University of Minnesota. She has a bachelor's degree from Macalester College, St. Paul, and a Ph.D. from the University of Minnesota including study at Oxford University, and a J.D. from the University of Minnesota.

About the Center for Rural Policy & Development

In 1997, a group of rural Minnesota advocates came together around a bold idea: to create a rural policy think tank that would provide policy makers, rural advocates and concerned citizens with an objective, unbiased and politically "unspun" examination of contemporary rural issues.

Funded through a public-private partnership, the Center for Rural Policy and Development today is an independent non-profit research organization dedicated to the objective study of the economic, social and cultural forces that are impacting rural Minnesotans and the communities they reside in. Over the years, our audience has grown to include state legislators, city and county officials, community leaders, business executives, college presidents, school superintendents and everyday citizens concerned about rural Minnesota and its future.

Hopefully, you will agree that RMJ is one of those resources worth having. To that end, we invite you to visit our web site at www.ruralmn.org to learn more about the Center for Rural Policy and Development, our resources and programs, and ways you can support RMJ.