A CASE STUDY
OF
BALDWIN COMMUNITY SCHOOLS
AND ITS ROLE AS A PARTNER IN THE NSF-SUPPORTED
MICHIGAN RURAL SYSTEMIC INITIATIVE

Prepared for the
NSF Rural Systemic Initiatives Evaluation Study

Submitted by
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A Case Study of Baldwin Community Schools and Its Role as a Partner in The NSF-Supported Michigan Rural Systemic Initiative

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by

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Foreword

On behalf of The Evaluation Center at Western Michigan University and the site visit team for the NSF Rural Systemic Initiatives evaluation study, I want to express my sincere gratitude and appreciation to the officials of the Baldwin Community Schools for their willingness to include their school in our study for the National Science Foundation. Ms. Faith Thomas Jones participated in all phases of the visits and helped arrange for meetings with faculty, staff, students, and members of the community. Further, faculty members were generous in allowing us to visit their classrooms and were willing to visit with us at length. The principal investigator for the Michigan RSI, Dr. Stanley Delidow, was also generous with his time and served as a valuable resource person. Finally, we thank each person who met with us and shared perspectives on the Baldwin Schools and the community it serves.

The visits to Baldwin were very enlightening and enjoyable to all members who served on the visitation team. We hope this report provides a fair and accurate description of the community, school, and efforts to provide a quality education for the students in the county. Clearly, there are many challenges, but we acknowledge the time and effort being provided by many dedicated professionals to meet the student needs of this community.

I want to thank the study team members, Jerry Horn and Jim Jess, for their professional expertise and the considerable contributions they made in developing this report.
Finally, my thanks to members of The Evaluation Center staff for their assistance in editing and preparing the final version of the case study.

Brian Lotven
Project Consultant

A Case Study of the Baldwin (MI) Community Schools and Its Role as a Partner in the NSF-Supported Michigan Rural Systemic Initiative

The Evaluation Center (EC) at Western Michigan University (WMU) is engaged in an evaluation study of the Rural Systemic Initiatives (RSI) with support from the National Science Foundation (NSF). The RSI program is intended to improve science, mathematics, and technology education in rural and economically disadvantaged regions through collaborative efforts involving K-12 school districts, four-year colleges and universities, community colleges, community organizations, and other stakeholders.

The project began in 1999 and was designed around a plan to examine selected RSI collaboratives—the Appalachian, Delta, and UCAN. Evaluation Center staff decided to conduct case studies in two communities in each of the three chosen collaboratives as the core of the project. Because these collaboratives had been operational for two or more years, a "post hole" type case study (one that was unique, not a preconceived model) was conducted. A site visit team of two to four professionals conducted on-site interviews and focus group meetings with teachers, administrators, students, and selected members of the community. The team also reviewed documents and observed classrooms and facilities over a period of three to five days. As available, RSI project personnel were included in the interview process in an effort to gain their perspectives of the collaborative's work as well as the implementation process at the local level. The team "lived" in the community during the time of the visits in an attempt to more fully understand the context of the school and the environment/community in which the RSI was engaged. The case study reports were completed, reviewed at the local level for accuracy, and submitted to the NSF. Summaries of the evaluative procedures, findings, and reports were also disseminated at meetings of professional groups of science, math, and rural educators as well as to other researchers, as requested and deemed appropriate.

In 2000, the NSF asked The Evaluation Center to expand the study to include three new RSI collaboratives and to extend the project through May 2003. The new collaboratives included the Texas RSI, Michigan RSI, and Coastal RSI. The same overall objectives for the evaluative study were applicable to the new RSIs, and four new questions were added. The additional questions related to new or alternative forms of student assessment, the contextual factors of the communities that support educational reform, the processes and conditions that facilitate effective operation, and the use and value of technology.

The Texas RSI became operational in 1999 and later divided into southern and northern groups, with additional funding from NSF in 2001. The Coastal and Michigan RSIs became operational in 2001. The post hole type case study approach, as a part of the initial phase of the WMU study with the more mature collaboratives, was judged as inappropriate and unfair for those in their early stages of development and operation. Instead, the decision was reached to employ a longitudinal case study approach consisting of three visits over a two-year period to three sites in each of the new collaboratives. Even then, the time frame is relatively short, which is a limitation of the overall study and particularly the study of individual collaboratives.

Site visit teams were formed and began gathering data during the 2001-2002 school year. The final visit of a study team to each case study community was conducted in Fall 2002.

Each case study team was composed of at least one project staff member and at least one member of the Research Advisory Team (RAT). The RAT member was selected on the basis of his/her special expertise or experience with an issue or condition determined to be a relevant factor in the case study. (In the Baldwin case study, Dr. James Jess, former superintendent of the CAL [IA] school district and a member of the Research Advisory Team, served as a member of

the study site team.) A case study visitor's guidebook was used to provide direction and format for the interviews in addition to specific and general questions to be addressed.

The case studies were designed to reflect an understanding of the variables within a school community that either support or serve as a barrier to education reform. The role of the RSI in the reform effort was the primary focus. The RSI may be one of several independent initiatives for school improvement, but should be a major source of input with regard to math and science education. Clear evidence of impact, including consideration of different types of evidence reflecting student learning, is important. Sources of positive effects of the RSI included traditional forms of student assessment; enrollment in advanced science, math, or technology courses; pursuit of careers requiring strong science, math, or technology backgrounds; and student work samples from independent investigation.

A plethora of social, economic, geographic, cultural, and other factors make comparisons of rural schools with suburban and urban schools problematic. These case studies focused upon the communities involved without preconceptions related to consolidation; depth/breadth of science, math, and technology offerings; qualifications of teachers; or other site-situational factors. Rather, the focus was on the schools as an integral part of the community and the effects of the community values of education and schooling. Social research speaks to the significance of the community power structure with regard to schools and schooling. Decision making, power brokering, and written and unwritten understandings are all part of "doing business" in rural communities. Clearly, the RSI project was an external intervention; and one reason for making the study longitudinal was to allow more opportunities for interaction within the school and the community.

Although all of the case study sites are rural and poor (by definition and as criteria for participation), each is quite unique in terms of history, racial and ethnic makeup, property values, governmental jurisdiction, and site situation. All of these factors play a part in the success or lack of success in education reform. Thus, attempts were made to trace the lineage of public education in each community. The site visit team made every effort to identify significant events that have contributed to the shaping of public education in these areas. In essence, what evolves is a story about the community from the eyes and ears of outsiders, but with a strong sense of understanding about rural schools and communities.

The Coastal RSI case studies focused on school districts in Charles City, Virginia (Charles City Middle School); Elizabeth City, North Carolina (Pasquatank High School); and Marion, South Carolina (Marion Intermediate School). The case study school communities in the Texas RSI collaborative were Carrizo Springs, Clarendon, and Pittsburg. In Michigan the evaluation project looked at two traditional public school communities—Baldwin and Whittemore-Prescott—and one state-approved and -funded charter school that serves a Native American community—Nah Tah Wahsh Public School Academy.

Lake County History

When Lake County was organized in the middle of the 19th century, it was named "Aischum" in honor of a Potawatomi chief. Bass Lake was called Na-Ta-Ka, and the Pere Marquette River was called No-Ta-Pe-Ke-Gon. Approximately half of the county is publicly owned and open for recreation. Baldwin is located in Lake County; and it is impossible to understand the community without viewing it in its social, cultural, and historical contexts. It is likely that no other poor, rural county in the United States can boast of having been entertained by as many nationally and internationally known entertainers. Lake County, however, has been the site of performances by each of the following: Louis Armstrong; "Cannonball" Adderly; "Count" Basie; Brook Benton;

James Brown; The Mills Brothers; Jerry Butler; Cab Calloway; Bill Cosby; Sammy Davis, Jr.; Billy Eckstine; Duke Ellington; Aretha Franklin; Stepin Fetchit; Earl Grant; Lionel Hampton; Earl "Fatha" Hines; Etta James; B.B. King; George Kirby; "Moms" Mabley; Barbara McNair; Della Reese; The Spinners; The Temptations; The Four Tops; Sarah Vaughan; "Fats" Waller; Dinah Washington; Jackie Wilson; and Stevie Wonder. Sports figures that visited the county include Joe Louis, Sugar Ray Robinson, Wilt Chamberlain, "Satchel" Paige, and "Goose" Tatum. In their book, *Black Eden*, *the Idlewild Community* (Idlewild is adjacent to Baldwin in Lake County; children attend the Baldwin Community Schools) published in 2002 by the Michigan State University Press, Lewis Walker and Ben C. Wilson chronicle the evolution of Lake County as a mecca among vacation spots for African Americans during segregation to its postintegration status as a very poor, sparsely populated county situated in what is largely forest and water. At its peak, there were even songs written about the area:

> In a big Lake Count-y, not man-y miles a-way, the count-less pil-grims gath-er for rest and play; It's trees of oak and love-ly folk, it's Ta-ber-nacle or a church, where ma-ples grow with state-ly birch. 'Tis na-ture's won-der-child, . . . A dream of life come true, and old Pere Mar-quette riv-er, so clear and blue, God made its wa-ters sing a strain, to bub-bling brook an' spring re-main, they chant and sing a sweet re-frain, with na-ture's mu-sic dream . . . .
>
> (Major N. Clark Smith as cited in Walker and Wilson, *Black Eden*)

In order to understand the culture and nature of Baldwin and Lake County, it is necessary to understand how the region has evolved, or devolved, over the last century. The dominant feature of the county is the Manistee National Forest, which is 40 miles from Lake Michigan; 75 miles north of Grand Rapids, Michigan; and less than 300 miles from Chicago and Detroit. The forest covers over 1 million acres. In fact, 48 percent of Lake County is forestland that is beautiful, but generates no tax revenue for the county.

With the abundance of forestland, Lake County provided a livelihood for many residents who lived there in the latter part of the nineteenth century. Loggers exploited the area and added to the population. According to census figures, in 1884 twenty-five sawmills in Lake County employed 1,200 people. The federal government made the logging industry extremely popular through their generous offerings. The standard government price for land was cut to $1.25 per acre, and timber speculators began a rush for choice pine lands when more than 10 million acres of unsold government lands were disposed of. Some grants were made directly to the state of Michigan under the label of "swamp" lands, but they were actually good forestlands and were sold to private individuals and companies at the aforementioned price.

Years of excessive cutting in Lake County resulted in the gradual disappearance of jobs related to the logging and timber industry. Employment related to the railroads, hotels, and saloons was lost as the demand for workers declined. The loss of the lumber industry was not replaced by other industries. Eventually, due to unpaid taxes, vast acreage of former timberlands in Lake County went into receivership.

As is true in virtually any societal trend, happenings far away often have direct impact upon what evolves locally. In the case of Lake County, the migration of former slaves from the south to the north is very important. While logging communities in Michigan were being formed, many blacks had begun to migrate to the north. By the time the land had been excessively harvested, a much larger black population had moved northward. Large and burgeoning industries in the north, notably automobile, steel, and meat packing, required huge workforces at a time when black residents in the north, empowered by the Thirteenth, Fourteenth and Fifteenth Amendments, were now mobile and in need of good jobs.

The northern cities offered opportunities that did not exist in the south. As a result, the northern migration accelerated. 1914-1920 were the years of the Great Migration. It has been estimated that in 1916, one thousand blacks were arriving monthly in Detroit. Between 1920 and 1930, the population of blacks in Detroit tripled. Similar gains were occurring throughout the north and the migrants included many businesspeople, professionals, and clergy who chose to follow their clientele northward. The decision to move north was widely encouraged by organizations including the National Urban League and the National Association for the Advancement of Colored People.

Of course, what awaited the newly arrived southern blacks upon their arrival to the north was not totally what had been dreamed, advertised, or expected. Although perhaps not the stultifying de jure segregation they had long endured in the south, their new home was clearly segregated. Although de jure segregation was not as prevalent or rigid as in the south, it existed. In addition, de facto segregation was the norm. The immigrants faced any number of physical and psychological barriers along with social and economic blocks. Competition with whites over housing and better jobs created tensions that sometimes became violent. The best jobs and housing went to longer term residents. As a result, black ghettos sprang up in the north.

However, a number of black professionals had middle class incomes and aspirations. One aspiration was to have a place to seek rest, recreation, and relaxation free from the treatment they were receiving in their new urban homes. That place was found in Lake County. The combination of an anxious market, cheap land proximate to the location of potential consumers, and the fact that the available land had been more or less scalped by timber interests and was, therefore, not worth much created an atmosphere where some found that money could be made.

Many black professionals were attracted to the area by the sales pitches that were made in pamphlets created by entrepreneurs seeking to attract customers. Many described the area as having sandy beaches, new hotel accommodations, unpolluted water, boating, swimming, golf, tennis, horseback riding, and nightclubbing. One Chicago office claimed that "the 2,700 acres of land, both cleared and uncleared, was parceled out into some 19,000 small plats 25 X 100 feet in size priced at $35.00 each ($6.00 down and $1.00 a week)." In a 1917 brochure, the same Idlewild Resort Company was described:

> *If you buy a lot in Idlewild you will be investing your money in a growing, rapidly developing locality where it will work for you while you sleep and where it should pay you handsome profits through increased values;*
>
> *If you buy a lot in Idlewild you will help, encourage and make yourself a part of one of the biggest, best, most beneficial, most progressive movements of the day;*
>
> *If you buy a lot in Idlewild you will place yourself, your family and your friends in position to reap the innumerable benefits that spring from personal contact and social intercourse with the deepest thinkers, the most active, most progressive people of the times;*
>
> *If you buy a lot in Idlewild you will always have a place to go where you can enjoy your vacations to the fullest extent, build up your health, increase your business efficiency, and increase your producing powers;*
>
> *If you buy a lot in Idlewild as long as you keep it you will not be dependent or homeless;*

If you do not buy a lot in Idlewild you will have neglected an opportunity—a real opportunity comes but seldom, and you will always regret it. Your children will always regret it. Is it better to say I'm glad I did or I wish I had?

Act now! Fill out one of the coupons below and mail to us with a money order covering the first payment and we will select a choice location for you. Every lot is guaranteed high and dry and suitable for building purposes.

As a result of the blitz of marketing, the influx of black vacationers boomed. Especially during the summer months, business boomed. Businesses included a dress shop, a gift shop, a grocery store, a car wash, a bike rental shop, a Swedish massage parlor, a cement company, a propane gas distributor, 6 cafes, 2 hotels, 12 motels, boarding houses, at least 4 nightclubs, a post office, a telephone operator office, a brick-making facility, a dry cleaning shop, and a food cannery.

The money introduced into the area's economy by black vacationers enabled the business district to grow rapidly. Lake County, which had depended almost exclusively on the logging industry, now depended primarily on tourism. The county was not, however, a model of racial tolerance. Blacks were not welcomed at white resorts, and the white developers of Idlewild also developed another resort in Lake County. Big Star Lake, located near Baldwin, was reserved for whites only. The black butlers, maids, and chauffeurs of white vacationers were not permitted to spend the night at the white resort.

It is ironic that the civil rights activities of the 1960s, which resulted in integration, contributed most significantly to the rapid decline and deterioration of what had been a lively, vibrant, successful black community. The very segregation that was a blight on this country enabled the success of an all black community. In a very real sense, the story of Black Eden is a story that could be told in many locales. It also describes how a region developed, declined, redeveloped, and declined again.

In a very real sense, the advent of civil rights legislation enabled black people to introduce themselves to those white places that had previously been forbidden to them. Whites, however, were not attempting to integrate formerly all-black sites. Integration was a one-way street, with black traffic and cash flowing to white facilities. Thus, the single direction integration contributed significantly to the dramatic decline in the fortunes of black enterprises.

Related to this decline was the reality that a community built as a segregated enterprise for blacks was not prepared to compete with other institutions in the larger society once segregation ended. Based on the assumption that there would always be segregation, thought was not given to any postsegregation world. For example, there had been little or no effort to diversify the Lake County or Baldwin communities in order to build a year-round economy. No attempts were made to open banks, build schools, establish a college, or use money generated during the summer months to create a year-round community. In other words, lack of vision and leadership were primary factors in the decline of the Idlewild resort. Once the restrictions ended, blacks started going to other vacation spots; the process accelerated, and the fate was sealed.

Lake County's Current Status

Lake County today is far from what it was during the aforementioned glory days when affluent tourists attracted top entertainment to the county. According to the Lake County Demographic Study of August 1999, Lake County is one of the poorest counties in Michigan. The poverty level for the county is 20.3 percent compared with a statewide rate of 11.5 percent. The poverty level for children is 34.5 percent, which is nearly double the child poverty rate of 18 percent for

the state. Given the rate of child poverty, it is not surprising that 95 percent of children attending the Baldwin Community Schools are eligible for free or reduced-price lunches. Overall, Lake County ranks #64 among all Michigan counties on the number of persons in poverty and #1 on the poverty rate. Lake County is considered the tenth poorest county in the United States. Selected demographic information regarding Lake County illustrates the social, economic, and demographic challenges that define the county today:

Population of County

Number of persons	11,630
Number of families	3,055
Number of households	4,704

Geographic Factors

Land area	567 square miles
Persons per square mile	20
Metropolitan area	none

Age Breakdown of County Population

0-19 years	17%
20-44	27%
45-64	40%
65 and over	19%
Median age	43.1

Racial Composition of County Population

White	9,595	84.7%
Black	1,266	11.2%
Native American	114	1.0%

(Other groups include Asian and Native Hawaiian/Other Pacific Islander)

Social and Education Demographics

Foreign-born	1.0%
Language other than English spoken in the home	2.9%
High school graduates (age 25+)	72.2%
Bachelor's degree or higher	7.8%
Persons with a disability (age 5+)	3,169 (out of total population of 11,630)

Economic Factors

Median value of owner-occupied housing	$61,300
Median household income	$26,622
Per capita income	$14,457
Persons below poverty	19.4%

Business Factors

Private nonfarm establishments	184
Private nonfarm employment	1,151
Nonemployer establishments	462
Minority-owned firms	<100
Women-owned firms (percent of total)	34.0
Federal funds and grants	67,412
Local government employment (FTE)	289

Statistics Related to Child Well-Being
(As reported in *Kids Count in Michigan 2001 Data Book*)

Total child population ages 0-17		11,333
Percentage of total population		21.9
Percentage of minority children		22.3
Age groups		
Ages 0-4	589	1.9 percent increase from 1990
Ages 5-9	623	0.8 percent increase from 1990
Ages 10-14	719	15.6 percent increase from 1990
Ages 15-17	551	63.5 percent increase from 1990

Households with Children	
Married couple with own child/children	725
Single parent with own child/children	355
Mother only	253
Father only	102
Other households with child/children	134

Diversity of Children		Percent of Total
White	1,929	77.7
African American	328	13.2
Multiracial	112	4.5
Hispanic	83	3.3
American Indian/Alaskan	17	0.7
Asian/Pacific Islander	5	0.2
Some other race	8	0.3

Family Support	Number	Rate
Children ages 0-18 receiving food stamps	553	19.5%
Children ages 0-18 receiving FIP (Family Independence Program) assistance	257	9.4%
Children ages 0-12 in subsidized child care	180	9.7%

Health Care	Number	Rate
Children, ages 0-18, insured by . . .		
Medicaid	1,086	39.8%
MIChild	26	1.0%
Children tested for lead poisoning, ages 0-5	50	6.3%

Children with Disabilities	Number	Rate
Babies with birth defects (avg. 1995-1997)	19	17.6%
Students in special education	148	18.5%
Children receiving SSI (per 1,000)	60	24.2%

Economic Security of Children	Number	Rate
Child poverty		
Ages 0-17	926	34.5%
Ages 5-17	674	34.1%

Child Health	Number	Rate
Inadequate prenatal care	13	11.0%
Low birth weight babies	10	8.0%

Child Safety	Number	Rate
Children in investigated families	186	74.9%
Confirmed victims of abuse or neglect	23	9.3%
Children in out-of-home care	36	14.5%
For abuse or neglect	23	9.3%
For delinquency	9	3.5%

Adolescence	Number	Rate
Births to teens	9	48%
High school dropouts	5	

Baldwin Community Schools

Baldwin Community Schools are located in the village of Baldwin, the county seat and largest community in Lake County, Michigan. With a population of slightly more than 1,100, the community is approximately 70 miles northwest of Grand Rapids and 50 miles south of Traverse City. Since its establishment in 1870, Lake County has experienced a gradual but steady increase in population. The 2,000 U.S. Census indicates that the county's population increased 32 percent since 1990 compared with 6.9 percent for the state of Michigan. The median age of the county's 11,630 residents is 43.1 compared with 35.5 for the state of Michigan. The fastest growing population segments are the 45 to 64 age group, which has increased by 40 percent, and those over 65, which has increased by 19 percent.

Forty-eight percent of Lake County's land is publicly owned compared with 20.3 percent for the state of Michigan. The county has an average annual snowfall of 45.3 inches and 35.58 inches of average total precipitation, which makes it one of Michigan's major year-round sports and vacation areas. Hunting, fishing, snowmobiling, and water sports are the most popular forms of recreation. Having a large area of publicly owned land is a detriment to the tax base of the county. The tourism industry does, however, contribute to employment and the income of local merchants. Other major employers in the county include the Baldwin Community Schools, a maximum-security juvenile prison, service providers and retail/wholesale concerns.

The Baldwin Community Schools consist of students in grades K-12 and are the only public schools located in Lake County. The total enrollment is 1,074 of which 666 are white, 380 are African American, and 28 are Hispanic. The secondary school was built in 1960 and houses the middle school grades 6-8 and the high school grades 9-12. A new elementary school sits adjacent to the secondary school on the campus. The former elementary school, built in 1955, now serves as the district's alternative school for secondary students and adult learners. The school buildings are located in the Village of Baldwin in the south central region of Lake County. In addition to the regular and special classrooms, the school buildings house well-equipped libraries; computer labs; a distance learning classroom in the secondary school; three gymnasiums; a kitchen and lunchroom in the secondary building; and office space for administrators, counselors, and office personnel. Behind the high school is a football stadium with a track and baseball diamonds. The elementary school has a playground area, and the alternative school has an outdoor recreation area. The campuses appear to be well designed and well maintained.

The elementary school is especially attractive with wide halls, a gymnasium, and library. The classrooms were highly decorated with attractive learning or stimulating posters. The level of activity and enthusiasm from both teachers and students appeared to be high. The secondary school building was very clean and presented a positive setting for learning. The library was attractive and appeared to be well used by students. During one visit, a number of students were engaged in after-school activities, working with teachers in math and other subjects. The school provides this opportunity as a means to provide informal tutorial assistance, prescribed supervised study, and special assignment due to school absences, misbehavior, etc. A room adjacent to the library housed at least 25 computers and was a beehive of activity. Some students were playing games on the computer, and others were engaged in more meaningful work. The enthusiasm of the teacher at this location seems to have been a key to the success in this area.

Administratively, two recent departures have left some leadership positions in a state of transition. The previous superintendent, Jack VanderWall, left the district late in the summer; and the high school principal, Jeff Duncan, left only a few weeks before the opening of the current school year. Two experienced, retired educators are currently holding these key positions on an interim basis and will remain until successful search processes for the positions are completed.

Faith Thomas-Jones provides stability at the administrative level. Ms. Thomas-Jones has been with the district for 16 years and currently serves as the middle school principal. Ms. Jones, in a continuing effort to connect the school with the community, has a "coffee-talk" for all parents once a month. This gathering is informal, with no set agenda, and allows parents an opportunity to discuss any concerns they have regarding their children and the schools. Dr. Patrick Creagan is in his third year in the district and serves as the elementary principal. Mr. P.T. Jones, who serves as director of the Baldwin Alternative School, also provides veteran leadership.

During the first site visit, a considerable amount of time was spent visiting individuals in the community and commercial concerns up and down Main Street. The support for the Baldwin Community Schools voiced by the individuals was extremely supportive and unanimous. Although not a scientific sample, it was impressive to randomly walk into local business and governmental concerns and hear the positive statements regarding the school.

Special Programs

A wide variety of special programs are available at Baldwin Community Schools.

KLICK. A program that appears to have been very successful at stimulating student interest and involvement is the KLICK (Kids Learning in Computer Klubhouses) program. The KLICK (and now Double KLICK) programs arise from the Lake County Michigan State University Extension Service. The program was made possible through the award of grant dollars through the United States Department of Agriculture's New Communities Project. This literacy improvement project was awarded to only three locations in Michigan: Lake and Chippewa Counties and Southwestern Detroit.

The New Communities funding was given to these communities because they achieved great success in the earlier KLICK program, which continues to teach middle school youth in the Baldwin School System. Both the 4-H Double KLICK and the KLICK programs are after school programs that teach literacy to students through computer technology. The major difference between the two programs is the audiences' age and the staffing. The KLICK program reaches

middle school youth and is run by school staff. The 4-H Double KLICK reaches elementary and high school students and is facilitated by the Lake County MSU Extension staff.

The programs are active after school from 3:30-5:00 p.m. There is also a Saturday morning Double KLICK session. Summer programs will be held for youth to develop more technology skills. In addition, the computer lab at the high school is open on Tuesdays from 5:00-7:00 p.m. for adult community members to learn computer skills.

Distance learning. The Baldwin Community Schools have been active in providing distance-learning opportunities for students. The district is a member of a consortium of six schools that participate in a USDA distance-learning grant. The project is funded in part by Dow Chemical, Great Lakes Casting, Oceana and Mason Community Foundations, Great Lakes Energy, Consumers Energy, Hasenbank Foundation, and West Shore Bank. Students have the opportunity to schedule virtual field trips by searching databases and registering online. Other opportunities include involvement with Two Way Interactive Connections in Education (TWICE). This site represents the combined efforts of schools throughout the state. Students may also avail themselves of COSI Columbus, which offers a wide range of electronic education programs for audiences of all ages. Students also have the opportunity to avail themselves of distance learning opportunities through the West Shore Community College High School Guest Program. Through the Guest Program, high school juniors and seniors have the opportunity to get a head start on their college program by enrolling in West Shore Community College courses while they are still in high school. Successfully completed courses may be applied to a West Shore Community College program or used for transfer to a senior college. To be eligible for admission, students must submit an ACT score of at least 16 in English with a 15 composite.

Project Success. The Baldwin Community School District is involved with the Lake County Rural Challenge Initiative in a collaborative effort entitled Project Success. The project is located in Idlewild and housed in the former elementary school building. The project offers alternative education (high school completion), adult basic education, G.E.D. prep classes and testing, and employability skill training.

The Project Success programs are for students experiencing academic difficulty in the traditional school programs. Indicators of difficulty may include attendance problems, weak study skills, personal problems, or low grades. The program is open to students in grades 9-12 and adult participants 18 and older.

The alternative program follows the traditional school program closely but offers fewer electives. Students enrolled in the program receive academic credit in core subject areas plus electives. Course curriculum is individualized according to grade level ability and need.

The Lake County Rural Challenge Initiative (RCI) will offer Adult Basic Education (ABE) classes, G.E.D. prep and testing services, computer classes, and employability skills training.

Problem-solving ideas and techniques are shared as they relate to interpersonal conflicts. Emphasis is placed on learning compromise, negotiation, and resolution of conflicts within an overall positive discipline philosophy.

The program has enjoyed success in lowering the dropout rate (9.2 percent in 1990-91 and dropped to 6.1 in 1998-99). Federal and state grants for school readiness, low class size, and at-risk programs have allowed the schools to provide extra services to students in need. This is critically important in the area of special education where nearly one-third of the students have been identified as learning disabled.

Tech prep. Baldwin High School, through a partnership with Mason-Lake Intermediate School District and West Shore Community College, offers a Tech Prep option to juniors and seniors. The Technical Preparation Partnership brings into focus the integral relationship between education and employment.

The program offers a large selection of career tracks and related courses. The Manufacturing Technologies track offers courses in Automotive Technology, Computer Assisted Drafting, Construction Technology, Electronics Technology, Graphic Communications, Machine Trades Technology, and Welding Technology. The Service Industry track offers courses in Allied Health Technology, Emergency Medical Technician, Hospitality Management (food service), Criminal Justice, and Travel and Tourism. The Business Service and Technology track offers Computerized Multimedia Accounting, Office Information Systems, and Computer Information Systems.

Mason-Lake Oceana Mathematics and Science Center. A program available at the Baldwin Community Schools that provides challenge and enrichment for the most academically gifted students is offered through the Mason-Lake Oceana Mathematics and Science Center. The center was established in 1989 by the Michigan legislature and is one of 33 regional centers that comprise the Michigan mathematics and science centers. The mission of the Mason-Lake Oceana Mathematics and Science Center (MLOMSC) is to foster the cooperative effort of educators, business and industry, and the community as a whole to improve mathematics, science, and technology education for both students and educators. An on-site program has been developed for selected high school students from the member schools. Ninth and tenth grade students meet in the morning and eleventh and twelfth grade students in the afternoon. The curriculum is innovative, integrated, and rigorous; and it includes college courses and real life experiences through research and internships. Currently, 9 Baldwin students (5 freshmen, 4 sophomores) are enrolled in this challenging and prestigious program.

Students apply for admission in the spring of their eighth grade year. Student selection is based upon multiple criteria including test scores, grades, counselor recommendation, 2 teacher recommendations, rating scales, 1 additional staff recommendation, student essay, parent information, and an interview. An independent selection committee reviews all applications. Each criterion is evaluated numerically. Typically, the 25 students with the highest overall rankings are invited to become members of the incoming ninth grade class.

Students study an enriched, integrated, accelerated program in both math and science. Algebra, geometry, trigonometry, statistics, and calculus outcomes are covered in an integrated manner rather than in isolation. The same is true of science. Biology, chemistry, and physics are studied in relationship to topics of study, not as isolated subjects. The mathematics curriculum covers the usual four years of high school mathematics in two years with more intensive study of algebra, calculus, and statistics available as upper grade electives. The first two years of science primarily cover biology, chemistry, and earth science. Juniors are required to take a full-year physics course. Seniors may elect to study advanced chemistry, integrated bio-statistics, or other options available through the Michigan Virtual University. The use of computers and calculators is an essential part of the curriculum at all times. Teamwork and independent research and study are both valuable components of the Center approach.

Internships in local settings are required in the eleventh or twelfth grade. Steps in scientific research are taught every year. Students are required to do primary research as juniors and seniors.

Students may elect to continue their integrated studies in the MLOMSC high school program for all four years. In the eleventh and twelfth grades, they also have the option of dual enrollment at West Shore Community College (WSCC). MLOMSC and WSCC have cooperated on a variety of options for center students. In addition to their center-based work, many take College Algebra, Statistics, Calculus I and II, General or Engineering Physics, and Biology. Other college options include Microbiology, Fundamentals of Ecology, Calculus III, and Differential Equations. Electives are chosen with future college and career plans in mind.

The Michigan Rural Systemic Initiative Project

The Michigan Rural Systemic Initiative (MiRSI) is a consortium of 16 school districts and 1 Native American academy that is designed to improve science, mathematics, and technical education. Ten of these districts are arranged geographically from the Saginaw Bay area and points north on the Lower Peninsula of Michigan. The remaining 6 sites are located throughout the Upper Peninsula. The principal investigator and director of the collaborative's RSI project is Dr. Stanley Delidow. There are 5 regional coordinators for MiRSI who are charged with developing relationships with school administrators and personnel, school boards, and community members. They also act as facilitators of and conduits for interpersonal networking and information sharing within the school districts. Additionally, they act to connect the districts with their broader communities and, ultimately, with the larger sphere of expectations for education.

Broad project goals for the MiRSI project include

1. The improvement of science, mathematics, and technology education in rural, economically disadvantaged regions of Michigan including using interactive technologies for instructional delivery and teacher training
2. The implementation of valid and sustained systemic change within chosen districts
3. The preparation of a technologically competent workforce that supports economic development within a community or region by strengthening the science, mathematics, and technology capacities within schools
4. The enhancement of scientific literacy and appreciation
5. The development of community infrastructure to provide resources for sustaining educational improvements

The regional coordinator for the Baldwin Community Schools is Dr. Stanley Delidow who is also the MiRSI project director. Members of the evaluation who participated in site visits to the district included Drs. Jerry Horn, Brian Lotven, and James Jess. After an initial orientation visit by Drs. Horn and Lotven on September 10, 2001, the first full site visit occurred on March 3-5, 2002. The subsequent site visit was October 2-4, 2002. Additional contacts were conducted via e-mail.

The primary focus of the Michigan Rural Systemic Initiative has been on Baldwin Middle School (grades 5-8). The middle school was identified by the previous superintendent as needing special attention in the areas of math and science. The high stakes testing associated with the Michigan Educational Assessment Program (MEAP) is having a strong impact on schools across Michigan, and the Baldwin Community School is no exception. A major focus of the MiRSI initiative has been on helping the Baldwin Community Schools in the areas of curriculum and pedagogy that will enable success for their students on the MEAP tests.

One factor that makes assessment of progress a challenge for the Baldwin Community Schools is the abnormally large turnover of students. It was reported that, of the students whose names

might appear on a class list, two-thirds might have been enrolled in another school the same year. A large number of students live with grandparents, and many are sent to Baldwin from large cities in an attempt to protect them from the problems of urban areas or as an alternative living arrangement for at-risk students. Because the MEAP results do not differentiate between longtime residents of the district and those who are either recent or transient residents, the effects of the Baldwin school experience may be difficult to assess.

Statewide MEAP scores are as follows:

Subject	Grade	2000	2001	2002
Math	**4**	74.8% Satisfactory	72.3% Satisfactory	64.5% Passing Levels 1 + 2
	8	NA	NA	53.8% Passing Levels 1 + 2
Science	**5**	43.6% Proficient	41.6% Proficient	73.2% Passing Levels 1 + 2
	8	24.2% Proficient	19.7% Proficient	66.6% Passing Levels 1 + 2

Michigan Educational Assessment Program (MEAP) scores for the Baldwin Community Schools, including all tested areas, are as follows:

Grade 4 Mathematics

Year	Achievement Level (%)				Number Included	Number Tested
	Level 1: Exceeded MI Standards	Level 2: Met MI Standards	Level 3: Basic	Level 4: Apprentice		
2002*	16.7	31.3	27.1	25.0	48	48
	Satisfactory	**Moderate**	**Low**			
2001	68.3	26.8	4.9		41	51
2000	70.2	10.5	19.3		57	NA
1999	70.2	23.4	6.4		47	NA
1998	52.8	30.2	17.0		53	NA
1991	17.1	23.7	59.2		76	NA

Note: ***** The reporting format of achievement levels for 2002 was changed from previous years.

Grade 4 Reading

Year	Satisfactory (%)	Moderate (%)	Low (%)	Number Included	Number Tested
2002	37.5	20.8	41.7	48	48
2001	56.1	26.8	17.1	41	50
2000	54.4	17.5	28.1	57	NA
1999	61.7	29.8	8.5	47	NA
1998	41.5	35.8	22.6	53	NA
1989	18.5	38.4	43.1	65	NA

Grade 5 Science

Year	Achievement Level (%)				Number Included	Number Tested
	Level 1: Exceeded MI Standards	Level 2: Met MI Standards	Level 3: Basic	Level 4: Apprentice		
2002*	7.5	30.2	41.5	20.8	53	53
	Proficient	Novice	Not Yet Novice			
2001	22.6	60.4	17.0		53	64
2000	18.4	57.1	24.5		49	66
1999	21.7	71.7	6.5		46	56
1998	21.3	68.1	10.6		47	47
1996	4.2	77.1	18.8		48	61

Note: * The reporting format of achievement levels for 2002 was changed from previous years.

Grade 5 Social Studies

Year	Level 1: Exceeded MI Standards (%)	Level 2: Met MI Standards (%)	Level 3: Basic (%)	Level 4: Apprentice (%)	Number Included	Number Tested
2002	16.7	31.3	27.1	25.0	48	48
2001	0.0	17.3	40.4	42.3	52	64
2000	0.0	6.1	32.7	61.2	49	66
1999	0.0	13.3	26.7	60.0	45	56

Grade 5 Writing

Year	Proficient (%)	Not Yet Proficient (%)	Number Included	Number Tested
2002	27.3	72.7	44	46
2001	36.8	63.2	57	62
2000	41.7	58.3	48	66
1999	33.3	66.7	45	55
1998	46.8	53.2	47	47
1996	32.7	67.3	49	53

Grade 7 Reading

Year	Satisfactory (%)	Moderate (%)	Low (%)	Number Included	Number Tested
2002	39.2	23.5	37.3	51	55
2001	42.6	36.2	21.3	47	54
2000	21.1	44.7	34.2	38	NA
1999	37.7	32.1	30.2	53	NA
1998	20.0	37.8	42.2	45	NA
1989	26.6	20.4	53.1	64	NA

Grade 7 Writing

Year	Proficient (%)	Not Yet Proficient (%)	Number Included	Number Tested
2002	52.0	48.0	50	50
2001	35.0	65.0	40	48

Grade 8 Science

Year	Achievement Level (%)				Number Included	Number Tested
	Level 1: Exceeded MI Standards	Level 2: Met MI Standards	Level 3: Basic	Level 4: Apprentice		
2002*	0.0	54.3	26.1	19.6	46	46
	Proficient	Novice	Not Yet Novice			
2001	3.0	54.5	42.4		33	34
2000	4.4	53.3	42.2		45	48
1999	8.8	64.7	26.5		34	45
1998	2.5	57.5	40.0		40	49
1996	1.7	51.7	46.6		58	58

Note: * The reporting format of achievement levels for 2002 was changed from previous years.

Grade 8 Math

Year	Level 1: Exceeded MI Standards (%)	Level 2: Met MI Standards (%)	Level 3: At Basic Level (%)	Level 4: Apprentice (%)	Number Included	Number Tested
2002	12.8	21.8	29.8	36.2	47	47

Grade 8 Social Studies

Year	Level 1: Exceeded MI Standards (%)	Level 2: Met MI Standards (%)	Level 3: Basic (%)	Level 4: Apprentice (%)	Number Included	Number Tested
2002	2.3	16.3	44.2	37.2	43	47
2001	3.6	14.3	35.7	46.4	28	35
2000	0.0	26.2	38.1	35.7	42	45
1999	0.0	14.7	41.2	44.1	34	45

Since these test results are from administrations that preceded major involvement or possibly any involvement of MiRSI in this school district, it is not fair or appropriate to assign responsibility for impact (negative or positive) on achievement test results to this project. However, it is important to understand the previous levels and patterns/trends of recognized achievement. According to available data, prior to 2002 there was a range of 52.8 to 70.2 percent of the grade 4 students whose MEAP scores were considered to be "Satisfactory." In 2202, 16.7 percent of the fourth graders "Exceeded (MI) Standards" in math and another 31.3 percent "Met" these standards. In another way of looking at the 2002 results, about 50 percent did not meet the standards. At the eighth grade level in 2002, 12.8 percent exceeded the standards in math and another 21.3 percent met these same standards. Yet, about 66 percent were judged to be at the "Basic Level" or at the "Apprentice Level."

In science, about 20 percent of the fifth grade students scored at the "Proficient" level from 1998 through 2002. But in 2002, a different scale was used, and only 37 percent were determined to "Exceed the Standards" and about 62 percent did not meet the standards.

In 2002, 54.3 percent of the grade 8 science students "Met" the standards, but less than 1 percent "Exceeded" the Michigan standard. Prior to that date (1998-2001), fewer than 10 percent of the students were judged to be "proficient" in science at the eighth grade level.

While MiRSI cannot be held accountable for student test scores, other activities were under way. One significant contribution of MiRSI has been to secure the services of a consultant who is working on a regular and continuing basis with the mathematics teachers. The consultant, Dr. William Cole, is a longtime faculty member at Michigan State University, has published extensively in the field of mathematics education, and has authored mathematics texts. He was present during both of the on-site visits and talked with team members regarding his role as a consultant, his philosophy of mathematics education, and his work with the teachers at Baldwin Middle School.

Teachers at the middle school were extremely positive regarding Dr. Cole. Both the teachers and principal stated that a key ingredient in the success of the math initiative has been the ongoing nature of the contact with the consultant. Dr. Cole also spoke of the critical nature of the ongoing relationship and said that one of the goals of his first year in the district was to convince teachers that he was not a "one-shot in-service guru" and would, in fact, be working with them over a long period of time. He also mentioned that the teachers initially required a degree of coaxing and support, since they had not been treated well in the past.

Cole began his work by first looking at the curriculum and textbooks and decided that the curriculum should be streamlined. As a result, the math curriculum has been changed by dropping Algebra I and implementing "integrated math" followed in tenth grade with Algebra II and Advanced Math or Pre-calculus in the eleventh or twelfth grade. He then analyzed the MEAP test results and attempted to determine why students were making incorrect responses. With this approach, he sought to determine what misinformation or what knowledge/skills would direct students to an incorrect response. This approach, which differs somewhat from the more traditional "prescriptive" approach in which an identified weakness—fractions, for example—is "remedied" by concentrating heavily on fractions before the next test cycle. In other words, the Cole approach focuses more on the genesis of the problem than on the more traditional quick fix approach. As a result, the curriculum becomes more a thoughtful process than a totally test-driven, catch-up model.

In-service collaboration with teachers that focused on MEAP results enabled the teachers to address the questions raised by the tests and framed by Dr. Cole. From these meetings, the following problems were identified:

Grade 4 Math

Making, reading, and using charts, tables, graphs, and pictorial representations

Problem solving
- Setting up problems from a story
- Setting up problems from a combination of words and graphs
- Strategies for problem solving
- Order of operations
- Analysis of choices

Reading questions thoroughly and answering questions thoroughly

Grade 8 Math

Analyzing data
- Graphs and charts—reading and using information to solve the problem
- Choosing pertinent information, using it to make predictions
- Problems with multiple steps
- Measurement (metric)
- Permutations and combinations
- Writing algebraic expressions
- Patterns—analyzing, using to make inferences and predictions
- Fractions in multistep problems

Vocabulary
- Area, composite numbers, combinations, congruent, mean, median, parallel, permutations, prime numbers, ratio, rotational symmetry, symmetry

Similar in-service sessions, enabled in part by MiRSI, identified problems within the science curriculum:

Grade 5 Science

Vocabulary (to work on)
Predator-prey, insect, conductor (good and poor), friction (increasing and decreasing), static charge, gravitational pull, magnetic attraction

Constructing
Charts, graphs, summaries; reading and understanding technical writing; reasoning; observation; and investigation

Reflecting
What constitutes scientific evidence?

Life
Ecosystems—food webs, heredity

Physical
Identifying properties of materials: size, shape, conductivity, recyclable
Forces and motion and related terminology: friction, gravity
Simple mechanical devices
Kinds of energy: heat, light, wind, electrical, sound, food

Earth and Space
Rocks and fossils; motion of the earth, sun, and moon; weather

Grade 8 Science

Constructing
Reading and making charts and graphs
Investigations
Reading technical writing

Reflecting
Evaluating arguments

Life
How organisms acquire energy from the sun; cold- and warm-blooded animals
Succession of an ecosystem, systems and processes working together, classifying and comparing

Physical
States of matter, motion and forces, light, sound, measurement

Earth and space
Rocks, fossils and geologic history, earth's relationship to sun and moon, topographic maps, water and its forms, sewage treatment/solid waste

Vocabulary

While maybe not as consistently requested or utilized, MiRSI arranged consultant services in the area of science. It appears that each consultant works with the school on an arrangement between the school and the consultant with the MiRSI serving in a facilitation role as opposed to

directing the activities. Both of the primary consultants for math and science are well respected in this school district, and their opinions and perspectives are valued. The consultants themselves feel at home and are able to freely interact with teachers and administrators on an informal and functional capacity.

Progress and/or Presence of the Drivers of Educational System Reform

Evidence of the presence or progress toward fulfilling the intent of the Six Drivers for Educational System Reform, as disseminated by the National Science Foundation, was a major focal point of the site visit team's work. In the following section, these findings are summarized.

Driver #1: Implementation of a comprehensive, standards-based curricula and/or instructional materials that are aligned with instruction and assessment available to every student served by the system and its partners.

There is evidence that the curriculum of the Baldwin Community Schools is based upon efforts to adhere to a standards-based curriculum. This is especially true at the elementary and middle school levels. Direct observation of classrooms and interviews with teachers and administrators provided evidence. Documents were provided that described student responses on the MEAP tests, as well as graphs indicating how Baldwin students performed on specific types of questions in science, math, and social studies at the eighth grade level. These documents represent strong evidence that the curriculum is being aligned with standards. Summaries from in-service activities that focused specifically on mathematics and science organization, planning, and implementation all indicate an understanding of what standards-based curricula and alignment mean.

The elementary and middle schools are the most active in the MiRSI initiative regarding K-12 scope and sequence, planning, alignment, and integration. Teachers at these levels report (and there is documented evidence of) focused meetings that allow planning and discussion.

Surprisingly, the Michigan Education Assessment Program (MEAP) is not a strong force in pushing teachers toward a greater understanding of standards and curriculum reform. The specter of accountability is a great motivator, and the teachers we interviewed understood the relationship of accountability to state standards and were mostly positive regarding the movement.

The influence of curriculum consultants in both mathematics and science cannot be overstated. The elementary and middle school teachers were especially positive regarding the degree, depth, and continuity of help they have received and continue to receive from the consultants. The mathematics consultant, who reported that the teachers were positive regarding change and readily asked for help and support, substantiated this. It is apparent that the work of the consultants is having a profound effect upon the operations, curriculum, and practices of the schools. Their continuing presence is a significant factor in the progress that the Baldwin Community Schools have evidenced with regard to this driver. Although the schools are not where they would like to be, it is apparent that the administration (including those serving in an interim role) and most faculty are knowledgeable, supportive, and striving to achieve the spirit of Driver #1.

Driver #2: Development of a coherent, consistent set of policies that supports provision of high-quality mathematics and science education for each student; excellent preparation, continuing education, and support for each mathematics and science teacher (including all

elementary teachers); and administrative support for all persons who work to dramatically improve achievement among all students served by the system.

The Baldwin Community Schools' administrators demonstrated a collegial approach to achieving the dictates of this driver. Although specific, written policies and procedures that might exist in a much larger district are not present, Baldwin manifests an approach that is indicative of what one might expect in a rural setting. All faculty members and principals (elementary and middle school) have been involved in supporting the move toward improvement of curriculum and instruction for the benefit of all students and, ultimately, improved performance on mandated tests.

The MiRSI and the Mason-Lake Oceana Mathematics and Science Center (MLOMSC) have been especially helpful with regard to mathematics and science. By providing well-respected, effective consultants on a continuing basis, they have provided the catalyst for continuing improvement. In addition, the administration has taken the opportunities provided by funding from various sources, including MiRSI, to enable faculty involvement in workshops that have resulted in products that deal directly with improving student achievement. An example of the relevancy of the workshops is evident in the minutes of a meeting conducted on October 3, 2001:

For every MEAP question, we compared the responses of Baldwin students to the responses of students statewide.

- *We characterized questions as*
  -Easy for Baldwin and easy statewide (over 73% of students chose the correct answer).
  -Easy for Baldwin students; more difficult statewide.
  -Difficult for Baldwin students and students statewide-with no common mistake.
  -Difficult for Baldwin students and students—with a common mistake.
  -Difficult for Baldwin students; easy for students statewide.
  -Guessing (about 25% selecting each option).

- *We completed a grid showing where each question fell according to the descriptions above. We coded each question according to benchmark and according to the 5 science topics: constructing science knowledge, reflecting on science, life science, physical science, and earth/space science.*

Several points were observed during the analysis.

- *We found that there were many items that were difficult for Baldwin students and students statewide. However, for 1/3 of the multiple-choice items, Baldwin students scored 12 to 23% below students statewide.*

  There were more items this year than last year on which Baldwin students scored above the state average.

  Baldwin students did not do well on questions that tested reflection.

  This year Baldwin students scored better on physical science questions than on earth science and life science questions.

  Although several Baldwin students scored no points or very few points on the constructed response questions, they almost always attempted the questions and remained on task. Those are good first steps on constructed response questions!

We then looked at every question . . . coded every multiple-choice question according to the percentage of students choosing each answer. We discussed reasons students may have selected particular wrong answers, especially when many students selected the same wrong answer. We talked about prevailing student misconceptions, errors in graph reading, weaknesses in science vocabulary, gaps in the curriculum and correlations of many science questions with math, language arts, and social studies curriculum. We also coded every constructed response question, noting the importance of careful reading and making sure the entire question had been answered.

The minutes continue with an analysis of MEAP data and conclusions that led to suggestions to improve student success. The minutes concluded with specific dates and topics for continuing workshops. The workshop minutes convey how the faculty and administration at Baldwin Community School have embraced the spirit of what Driver #2 describes.

In the middle and elementary schools it was obvious that the principals were perceived as instructional leaders. Discussions with the principals and independent discussions with classroom teachers indicated that the principals at these levels clearly follow the servant leader philosophy. A well-qualified individual who likely shares the aforementioned philosophies is currently filling the position of high school principal. He is serving in an interim status until a permanent superintendent and high school principal are hired. The teachers were also overwhelmingly positive regarding the workshops and in-service presentations that had been enabled, in part at least, by funding provided by MiRSI and other outside concerns.

Driver #3: Convergence of the usage of all resources that are designed for or that reasonably could be used to support science and mathematics education—fiscal, intellectual, materials, curricular, and extracurricular—into a focused and unitary program to constantly upgrade, renew, and improve the educational program in mathematics and science for all students.

The Baldwin Community Schools evidence a commitment to securing all available resources for the purpose of providing the most varied, modern, and relevant programs possible in mathematics and science for students.

Technologically, Baldwin has very adequate resources. There are computers with Internet access in each classroom. Graphing calculators, distance education and satellite capabilities are available to enhance the academic programs.

A number of initiatives are aimed at increasing interest and usage of the available technology. Students are able to enroll in advanced and college credit courses through distance education. The KLICK and DOUBLE KLICK programs have been very successful in stimulating student involvement with computers. The Mason-Lake Oceana Mathematics and Science Center offers a number of opportunities for Baldwin students, and the Tech Prep program also has a math and science component. In all of these initiatives students, faculty, and administrators were knowledgeable, enthusiastic, and eager to discuss the programs.

No specific budget figures were presented that would indicate that a greater percentage of the Baldwin budget was being dedicated to mathematics and science. Teachers who were interviewed were uniformly supportive regarding the adequacy of support they were receiving for their programs. It was readily apparent that the schools had been effective in securing additional resources (including MiRSI) for math and science beyond the traditional school funding.

It is not apparent that the programs and technology that the schools have been able to amass have been integrated into a "focused and unitary program." That is, however, a long-term ongoing process. Documentation from workshops and meetings along with discussions with teachers, administrators, and consultants indicate that the integration is a goal that is being actively pursued.

Driver #4: Broad-based support from parents, policymakers, institutions of higher education, business and industry, foundations, and other segments of the community for the goals and collective value of the program, based on rich presentations of the ideas behind the program, the evidence gathered about its success and its failures, and critical discussions of its efforts.

Considerable coordination and cooperation exists between the Baldwin Community Schools and the region's stakeholders. Evidence of this cooperation is based upon interviews, impromptu visits, observations, and examination of documents and agreements.

The support from parents was obvious during visits with parents both in the school building and in the community. During one on-site visit, the school was closed for one day due to weather conditions. The visitation team spent that day visiting with individuals in local cafes, business establishments, the local newspaper, community governmental sites, and state offices. The support voiced for the Baldwin Community Schools was positive and enthusiastic, with anecdotal evidence that the school works very hard at stimulating and increasing parent support. One example is the coffee-talk that the middle school principal holds for all parents once a month.

There was no evidence that the nearest state universities (Ferris State University in Big Rapids and Grand Valley State University in Grand Rapids) have had any substantial involvement with the Baldwin schools. A nearby community college, West Shore, has established a program (Guest Program) that enables students to gain college credit at the institution while still a high school student. Dr. William Cole, the mathematics consultant, has been a long-time professor at Michigan State University.

The school district has received support from many area entities. The distance learning program available in the schools was funded from a USDA Distance Learning grant. In addition, Dow Chemical, Great Lakes Casting, Great Lakes Energy, Consumers Energy, The Hasenbank Foundation, and West Shore Bank have all provided support. The Tech-Prep program enables students to become deeply involved in a number of community business and industrial concerns. An indirect benefit of this program is the continued support for and linkages to the school that occur as a result of the broader community's opportunity to interact with students on a professional basis.

Another key to community support is likely linked to the breadth of programs available. Mathematics and science are often viewed as the home of only the most gifted students. The Baldwin schools have put a considerable effort into offering programs that, while grounded in math, science, and technology, are not exclusive to the most gifted. Although some programs related to the Mason-Lake Math and Science Center and distance learning are intended to meet the needs of the most academically talented, other programs strive more to increase motivation, interest, understanding, and appreciation of these areas. Tech Prep, the KLICK programs, Distance Learning, and Project Success all focus on students who likely are not the most academically gifted. As a result of these initiatives, the dropout rate has decreased and parents remain more involved in the school lives of their children.

The problem of children who tend to drift in and out of Baldwin remains a broader social issue beyond the purview of the school. However, the Baldwin Community Schools offer, especially for the size of the district, a broad array of academically based programs designed to make the schools as inclusive as possible.

Driver #5: Accumulation of a broad and deep array of evidence that the program is enhancing student achievement, through a set of indices that might include achievement test scores, higher level courses passed, college admission rates, college majors, Advanced Placement Tests taken, portfolio assessment, and ratings from summer employers, and that demonstrate that students are generally achieving at a higher level in science and mathematics.

The high stakes testing program in Michigan is the single most broadly visible factor for examining student achievement. The test scores on the Michigan Educational Assessment Program (MEAP) as reported earlier do not reveal any indications of major improvements. A number of factors might be related to the apparent lack of strong improvement in test scores: (1) the work of the mathematics and science consultants is only midway through the second year; (2) the in-services and workshops that have focused on the MEAP, especially in math and science, occurred only in the recent year; (3) changes in the curriculum are recent and could not be expected to be reflected in current MEAP scores; (4) the ongoing problem of transient students moving in and out of the district makes assessment of Baldwin problematic.

Information regarding college attendance, college graduation rates, and other indications of student achievement were not available. One positive report was that the Baldwin schools currently have 9 students (5 freshmen and 4 sophomores) accepted to and enrolled in the West Shore Community College Math/Science Center. A full-time counselor disseminates information regarding postsecondary education including Web sites for colleges and universities, financial aid, and scholarships. The counselor also holds a financial aid seminar for interested parents and students. At the recent seminar the director of financial aid at West Shore Community College was the guest presenter.

At this time there is not the improvement in student achievement test scores that would indicate major improvement. Other measures of achievement that have not been examined might better measure the impact of MiRSI or other initiatives in the Baldwin Community Schools. It seems that the schools are doing a number of the right things very well. Certainly the attitude, dedication, and spirit are evident; but the results, as reflected by MEAP at least, are not apparent. Given the relatively short time that many of the initiatives have had to operate, it is not unreasonable to expect that test results in the near future will reflect the efforts.

Driver #6: Improvement in the achievement of all students, including those historically underserved.

The Baldwin Community Schools evidence a record of involvement in a variety of initiatives aimed at increasing achievement for all students. Given the diversity and poverty of the clientele they serve, it would be unthinkable to do otherwise. An examination of the demographic data earlier in this report will indicate that the term *historically underserved* refers to the Baldwin Community Schools student population as a whole. Virtually every attempt to help students refers to historically underserved. In all encounters with teachers, students, parents, and other stakeholders, the spirit of educating all students was apparent. There was no blame on "those people," nor was there any complaining about the hand the school was dealt. The only frustration aired dealt with the problem of transient students. Some said they wished for a way to measure achievement in students that were in the Baldwin Schools for a long period of time as

opposed to those who tend to "come and go." It is positive that there appears to be a real effort to meet the needs of all students. Programs that focus on building patterns of curriculum and instruction in math and science are not tracked for the elite few, but rather are based on sound pedagogy with the help of seasoned professionals. To this end the MiRSI has certainly been a large contributor. Although the dividends have not been reflected in the MEAP, the future looks hopeful.

Other programs are also mostly inclusive and, if not directly related to an increase in MEAP scores, might well be related to the reported decrease in the dropout rate. The KLICK program, Tech Prep, Progress Success, and portions of the Distance Learning program are inclusive and invite participation of all students.

Because the MEAP does not report findings based on race, it is not possible to provide analysis of racial differences in test results. It can be reported, however, that at both site visits the observers noted the integration of African-American and white students. No separate groups were based on race. Students of both races were observed engaged in classroom activities, athletic activities, and academic nonclassroom pursuits. Although the racial percentages for the nine students attending the math/science center at West Shore Community College weren't reported, we know that one student was an African-American male. This student was interviewed purely by accident; we encountered him while walking on campus.

In Baldwin, this driver is of little significance, with the possible exception of gender and the transient population that tends to be very poor and at risk. However, the middle school principal, an African-American female, has been in the district for 17 years and is widely embraced throughout the school and community as a leader and role model.

Based on a set of indicators for each driver that were developed and validated by the Resource Advisory Team of the NSF RSI evaluation study being conducted by The Evaluation Center at Western Michigan University, the overall rating of each driver in the Baldwin Community School District is shown in the following table.

Rating of Educational System Reform Drivers

Driver	Rating
1. Implementation of standards-based curriculum . . .	2-3
2. Policies supportive of quality math and science programs . . .	3
3. Convergence and usage of resources to support math and science programs . . .	3
4. Broad-based support and involvement of parents and others . . .	3
5. Accumulation of broad and deep array of evidence that the program is enhancing student achievement . . .	1-2
6. Improvement in the achievement of all students, including the historically underserved . . .	2

Rating Scale
0 = Not present/no evidence
1 = Weak evidence/beginning but sporadic
2 = Moderate evidence/developing but visible success
3 = Strong evidence/operationally consistent and widespread

Concluding Statement

The Baldwin Community School District definitely fits the profile for schools targeted by the Rural Systemic Initiative. It is rural and its clientele, according to demographic statistics, is poor. It is also a district that has attempted to meet the needs of the students it serves through a variety of programs, initiatives, and grants. Given that the schools actively seek ways to augment their ability to meet student needs, the MiRSI is an appropriate match. The community school system, with the emphasis on MEAP, is aware of and supportive of a standards-based approach to mathematics and science.

The MiRSI program appears to be a well-received addition to efforts aimed at improving student achievement in mathematics and science. The consultants have been well received and have been active in helping teachers with both curriculum and instruction. Through their work, teachers are actively analyzing MEAP results and working to align curriculum while creating instructional plans that will meet student needs in terms of motivation and learning style. This is a too rare and welcome change from the "drill and kill" that has often been the response to high stakes testing. MiRSI has also enabled math and science faculty to be involved in workshops and in-service programs in support of the curricular and instructional reform. Although not in competition with the MiRSI initiative, it should be noted that the Mason-Lake Oceana Mathematics and Science Center has goals similar to those of MiRSI and has been integral in helping Baldwin in the areas of math and science as a partner of MiRSI. The Baldwin Community Schools is to be commended for its ability to aggressively marshal all available resources as it seeks ways to meet student needs.

To this point the results of the state-mandated MEAP test have not yielded the desired improvements. Two factors may be cited as possible reasons for the lack of sizable gains: (1) There has not been enough time for many of the efforts of MiRSI and other entities to be reflected in the tests; and (2) although it is not a popular statement to make, the fact is that the best predictor of performance on a standardized test like MEAP is socioeconomic status. Given the realities of the students in Baldwin Community Schools, gains will likely be quite difficult. This does not mean that schools should give up; rather, it means that schools like Baldwin face a more daunting task than other schools in more fortunate circumstances. To their credit, the faculty and administrators of the Baldwin Community Schools are aware of the challenge and are working hard to face it successfully.

It should be noted that the last on-site visit for this case study was conducted shortly after the school was notified that NSF was withholding continuation funds for MiRSI. In short, this may be the termination of the rural systemic reform effort with the assistance and leadership of the MiRSI. This a particularly disappointing revelation to this school, since it had agreed to be a part of this collaborative on the condition that it would be there for the "long haul." The school staff reported that too many times in the past they agreed to be a part of other educational improvement efforts, only to have them cut short for one reason or another. With the history of this community and the current socioeconomic and racial mix, it is a particularly attractive target for programs that require a proportionally large number of minority and/or poor students. School personnel fully believed that MiRSI would continue for a minimum of five years, and there were even plans to ensure continuation beyond the current project. The plans included a commitment for each participating school district to contribute "real" dollars to a fund that would ensure some reasonable level of continuity. Now, this commitment may well be in jeopardy or even totally dropped if NSF does not provide relief for MiRSI.

Project personnel have been notified of the projected time for which resources will be available, and they will soon be looking for other opportunities and locations for their services. While the

study team is not aware of the basis for the NSF program officer's decision to at least temporarily withhold monies, it appears that the decision was a complete surprise to the project's administrators and a disappointing action to the participating schools, like Baldwin.

As the 15 case studies are completed in this evaluative study, it is clear that the need to improve math and science in schools that are located in rural areas is great. Yet, each presents a different set of circumstances and conditions that either supports or serves as a barrier to systemic reform. There are some indications that NSF is encouraging all RSIs to follow a common model. The idea of "one model fits all" is a common error that has pervaded rural education from the time that school consolidations and large schools were in vogue. A considerable portion of the research literature in rural education is devoted to this issue. We are unaware of any credible study that would support the notion that one approach to professional development and school improvement is the best for all situations.

Rural schools serve unique populations of students, and they play different roles in the communities in which they are located. Clearly, each has factors and conditions, some of a historical nature, that require special attention. Change is as difficult in these schools as it is in any organization, but the RSI has provided a common focus and resources to address some of the weaknesses and to build on the strengths of these communities in their efforts to improve science and math education for their children and youth. Baldwin, Michigan, is one prime example of this effort.