

Craton LIDDELL, et al., Plaintiffs,
v.
The BOARD OF EDUCATION OF the CITY OF ST. LOUIS, MO., et al., Defendants.

No. 72-100C(5).

United States District Court, E.D. Missouri, E.D.

September 3, 1987.

Joseph McDuffie, William P. Russel, St. Louis, Mo., for Liddell plaintiffs.

Michael Middleton, Columbia, Mo., Wayne C. Harvey, St. Louis, Mo., Craig M. Crenshaw, Jr., Jeremiah Glassman, U.S. Dept. of Justice, Washington, D.C., for Caldwell and NAACP.

James J. Wilson, St. Louis City Counselor, St. Louis, Mo., for City of St. Louis.

Michael Fields, Asst. Missouri Atty. Gen., Jefferson City, Mo., for State defendants.

Kenneth C. Brostron, Stephen Cooper, Lashly Baer & Hamel, St. Louis, Mo., for City Bd. defendants.

Joseph R. Neimann, Eric Schmitz and Timothy R. Kellett, St. Louis, Mo., for Special School Dist.

Shulamith Simon, St. Louis, Mo., amicus curiae.

Anthony J. Sestric, St. Louis, Mo., for Ronald Leggett (Collector of Revenue).

Warren M. Brown, Jay Moody, Lake St. Louis, Mo., for Budget Review Committee (BRC).

Tracy Libros, Director, Magnet Review Committee, St. Louis, Mo., for Magnet Review Committee (MRC).

Susan Uchitelle, Director, VICC-Wright School, St. Louis, Mo., for Voluntary Interdistrict Coordinating Council (VICC).

James Dixon, Exec. Director, Committee on Quality Educ., St. Louis, Mo., for Committee on Quality Educ. (CQ).

Mary Bremner, Exec. Director, St. Louis, Mo., for Desegregation Monitoring & Advisory Committee (DMAC).

Ralph Beacham, Exec. Director, Florissant, Mo., for Metropolitan Coordinating Committee (MCC).

William Knaak, Exec. VP, Convergent Systems, St. Paul, Minn., for Vocational Educ. Advisory Council (VEAC), Bi-Racial Monitoring Team (BRMC).

James Leroy Jones, St. Louis, Mo., Jay Willows, Director, GAMM Project, LaBelle, Mo., for Vocational Educ. Advisory Council (VEAC).

E.J. Williams, Superintendent, New Orleans LA School Dist., New Orleans, La., for Bi-Racial Monitoring Team (BRMT).

Charles Werner, St. Louis, Mo., Robert Bartman, Asst. Com'r, Dept. of Elementary & Secondary Educ. Jefferson City, Mo., for Nat. Educ. Ass'n (NEA).

688 *688 Andrew J. Minardi, Joseph Ferry, St. Louis, Mo., for St. Louis County defendants.

Robert G. McClintock, St. Louis, Mo., for Ladue School Dist.

George J. Bude, St. Louis, Mo., for Clayton, Hancock Place, Brentwood and Bayless School Districts.

Kenneth V. Byrne, St. Louis, Mo., for Valley Park School Dist.

Donald J. Stohr, James Erwin and R.J. Robertson, St. Louis, Mo., for Parkway School Dist.

Douglas A. Copeland, Robert W. Copeland, St. Louis, Mo., for Webster Groves and Rockwood School Districts.

John Gianoulakis, Mark Bremer, St. Louis, Mo., for Ritenour, Pattonville and Mehlville School Districts.

Richard Ulrich, James Sanders, St. Louis, Mo., for Maplewood and Richmond Heights School Districts.

Frank Susman, Norman C. Parker, St. Louis, Mo., for Ferguson-Florissant School Dist.

Edward E. Murphy, Jr., Garry E. Selzer, St. Louis, Mo., for Riverview Gardens School Dist.

Robert P. Baine, Jr., St. Louis, Mo., for Hazelwood School Dist.

Henry D. Menghini, Robert J. Krehbiel, Evans & Dixon, St. Louis, Mo., for Lindbergh and Affton School Districts.

Bertram Tremayne Jr., St. Louis, Mo., for Kirkwood and University City School Districts.

Darold E. Crotzer, Jr., St. Louis, Mo., for Normandy, Wellston and Jennings School Districts.

MEMORANDUM OPINION

LIMBAUGH, District Judge.

It was the best of times for the St. Louis city school system. The coveted Triple AAA rating bestowed by the Missouri Department of Education has again been received. A quality education is generally provided for all the city children attending public schools. A sound faculty of teachers and principals are dedicated to use their utmost talent in developing the skills of their students. Parents and friends are caring more about the children and are beginning to work with the educators in the business of youth education. The breadth of educational opportunity is unlimited.

An impressive black principal of an all black primary school and his remarkable first assistant stated "our goal is to make certain these children learn to communicate and when they leave our school for middle school, they can."

A white principal of a mixed middle school remarked that "these students are now being exposed to sophisticated educational experiences and they will be equipped to take their place in this competitive society."

A high school principal observed that "our teachers are back to the basics with their students, but a huge variety of other educational opportunities exists."

Throughout the system, remedial programs are administered to those students with learning disabilities and devoted teacher after teacher provide tender care for these youngsters giving them "something to hang on to."

Enrichment programs are evident and are receiving increased attention. It is amazing to enter a room in which a dozen or more fifth graders are each performing an assignment on their Apple-type computers.

An air of friendly but strict discipline pervades the system. Respect is being instilled. When the principal enters the room in some delightful primary schools, the children rise and acknowledge in animated voices, "Good morning Ms. _____."

There is great pride among the middle and high school students. Their excellent art work is everywhere. They are striving to keep their schools clean and presentable. Custodial staffs are attentive to their duties. School spirit abounds. In many difficult situations, racial problems are alleviated and the number and intensity of racial incidents remains low.

*689 Parents and relatives are coming to school meetings and are working with the teachers in seeking the best educational interests of the children. On Saturdays and after hours, some parents can be seen with the children painting the walls of school buildings with paint and equipment they provide themselves.

Vocational education is virtually unlimited. Students can receive special training in every field imaginable. A young black female has just finished a difficult welding assignment done with a highly sophisticated computer system. Others are in aviation mechanics or are using all trades to build a house (within the school confines), or are developing beautician skills or a host of other things. A middle school has its own radio broadcasting network.

Teachers, principals and administrators, generally, have worked diligently to promote a sound integrated school system and much progress has been made. It is a good school system.

But, it was also the worst of times for the St. Louis city school system.^[*] The schools have not received major repairs in the memory of most of the staffs. Roofs leak in over half the schools. The leaks receive only temporary attention. In classroom after classroom, in gymnasiums, in libraries and study halls and in cafeterias, water is everywhere. It drips from the ceiling, down the walls and even from light fixtures.

Cans, buckets and other receptacles are all over. A sixth grader in a reading class leans over in her chair to avoid the steady drip of water going into a bucket at her feet.

Some of the plumbing is intolerable. On one occasion in a school when the water was flushed from a urinal, portions came down a wall in the room below, while a devoted teacher was attempting to teach her students in that room.

Ceiling tile in many rooms no longer exists or is so permeated with water that it hangs perilously. Plaster falls to the floor sometimes placing the student or teacher in some danger.

Paint peels from many walls and exposes the plaster or wall board and sometimes the studs.

Many buildings are old and dilapidated and were designed for education seventy-five years ago. Some have no gymnasiums. Others have gymnasiums, but the ceilings are only seven or eight feet high. In many schools, a student must bend or duck going from some rooms to others to avoid hitting exposed pipes or mechanical supports.

In the face of this deplorable and impossible situation, those in charge use band-aids to cover gaping wounds and, with some hypocrisy lament the lack of funds to conduct a necessary structural overhaul of the city school buildings as being the sole basis of their inaction.

And, too, without addressing them, the school system has its other problems and deficiencies as do all metropolitan schools.

This opinion, therefore, addresses the capital improvement problems of the city integrated and non-integrated schools as well as those of the existing magnet schools and those which may reasonably be needed in the foreseeable future.

Although this case was filed in 1972, the physical condition of the schools was not considered until the so-called Settlement Plan was approved and later accepted by the Court. No attempt will be made here to recount the history of the events leading to the enactment of the Settlement Plan as it has been adequately reviewed in *Liddell v. Board of Education of City of St. Louis*, 567 F.Supp. 1037 (E.D.Mo.1983), *690 and *Liddell v. State of Missouri*, 731 F.2d 1294 (8th Cir.1984).

The Settlement Agreement basically was an attempt to address previous determinations of this Court and of the United States Court of Appeals for the Eighth Circuit, that the defendant Board of Education of the City of St. Louis (City Board), and State of Missouri defendants were liable because of their establishment and maintenance of a racially segregated public school system within the City of St. Louis. The remedy for the liability was ordered in 1980 by this Court, (Meredith, J.), *Liddell v. Board of Education*, 491 F.Supp. 351 (E.D.Mo.1980). The order directed the implementation of a mandatory, intradistrict desegregation plan within the City of St. Louis public

school system, and the development and submission of plans involving voluntary interdistrict transfers between suburban school districts and the St. Louis city school district.

Following the 1980 order, the Court approved two interdistrict transfer plans (the 12(a) voluntary plan and the 12 (b) vocational education plan). The 12(c) Settlement Plan was approved in 1983 in Liddell v. Board of Education of City of St. Louis, 567 F.Supp. 1037 (E.D.Mo.1983). This was done after a fairness hearing in which all parties had complete opportunity to present evidence and the point of view of each.

The physical condition of existing schools following the Settlement Agreement (Settlement Agreement and Settlement Plan are used interchangeably), was first addressed by the appellate court in Liddell VII, 731 F.2d at 1318 (decided February 8, 1984). As noted in Liddell VII, p. 1318, the Settlement Agreement suggested the age and condition of the city schools.^[1] The Court in Liddell VII, at p. 1318, also observed that over the years, the school board has attempted unsuccessfully to raise funds to provide for school improvements.^[2]

In approving the 12(c) Settlement Plan, Liddell, supra, 567 F.Supp. 1037, the District Court (Hungate, J.)^[3] ordered that:

(b) The City Board shall submit to its voters, on or before February 1, 1984, a proposed bond issue of an amount determined by the City Board as sufficient to meet those of its capital improvement needs as are deemed necessary to meet its constitutional obligation to desegregate the city's public schools; (and) (c) Should that bond issue fail to obtain the two-thirds majority vote required by state law, the court will consider an appropriate order to obtain the funds deemed sufficient to meet the capital improvement needs of City Board in complying with its constitutional obligation to desegregate the city's public schools.

Liddell supra, 567 F.Supp. at 1056 and Liddell VII, supra at 1318.

Following the District Court's order, the City Board formulated a building program with a total cost of \$127,000,000.00 with one-half of the total to be financed by the issuance of \$63,500,000.00 in City Board bonds. Ostensibly, the other one-half was to be paid by the State of Missouri.

691 The bond issue was presented to the voters on November 8, 1983 and 55% of the voters approved the issue. Eighty-four percent of the voters in the predominantly black wards voted for the issue, but 65% of the voters in the predominantly white wards voted against it. The bond issue was defeated because it failed to receive a *691 two-thirds majority. Liddell VII, supra at p. 1319.

Following the February 8, 1984 Liddell VII decision a bond issue identical to the one defeated on November 8, 1983 was again submitted to the voters on June 5, 1984. It, too, was defeated with a voting pattern similar to that in the 1983 election.

The Court of Appeals for the Eighth Circuit specifically held in Liddell VII, supra, at p. 1319 "that the State had an obligation to pay one-half of the costs of the capital improvements program necessary to restore the city facilities to a constitutionally acceptable level ..." The Court of Appeals in Liddell VII, supra, at p. 1319 also directed,

On remand, therefore, the City Board should promptly identify the projects to be undertaken, estimate the cost of each project, and set a reasonably detailed schedule for the completion of each project. The projects having the highest priority must be scheduled for completion at the earliest possible date. To that end, the City Board should consider the desirability of a referendum on a bond issue which can be initiated at a very early date, and subsequent bond issue for those projects to be built in later years. The State will pay one-half of the cost of preparing the detailed plans and schedules.

As soon as the City Board has prepared the new plans, estimates and schedules, it shall submit them to the Budget Review Committee, discussed infra Section VI, and then to the district court. When the District Court has approved them, a new bond issue shall be submitted to the voters. If it is defeated again, the District Court shall determine how the improvements shall be funded. See infra Section V.

Following the decision in *Liddell VII* of February 8, 1984, the District Court directed the United States Magistrate to conduct an evidentiary hearing and recommend the legal standard to be applied in ascertaining the desegregation-related costs of a capital improvements program for the schools operated by the Board of Education in the City of St. Louis. After extensive hearings, United States Magistrate Noce filed his report and recommendation on October 17, 1984, H(3422)84. Although a standard was not set out with specificity, Magistrate Noce noted that there ought to be no distinction in the basic quality and educational usefulness of the capital facilities of the non-integrated schools, the integrated schools, the magnet schools, or any capital asset necessary to support any remedial program. Districtwide, the capital facilities must be brought to a uniform minimum level of educational utility. No specific order of the District Court was ever entered approving or disaffirming the findings of the Magistrate.

During the same period of time, the City Board determined that professional assistance would be needed in the capital improvement area to follow the mandate of *Liddell VII*, so as to enable it to "identify the projects to be undertaken, estimate the cost of each project and set a reasonably detailed schedule for the completion of each project." *Liddell VII*, at 1319.

The professional assistance needed would include engineers and architects who could survey the approximate 150 schools in the system and make recommendations to the City Board and to the Court. While discussions were being carried out between the State and the City Board concerning the procedure to be followed to employ professional assistance, Judge Hungate was relieved of the responsibility of handling this case and on February 1, 1985, Judge Limbaugh was appointed as the successor to Judge Hungate.

On March 20, 1985, the State and the City Board reached an accord and agreed to prepare jointly an invitation to submit bids to employ architects and engineers to make the necessary evaluation of the capital improvement problem. The parties agreed to share the cost equally for the preparation of detailed plans and schedules. L (122)85. On April 15, 1985, the Court approved the agreement of the State and the City Board and ordered the parties to file a joint report on the status and *692 findings of the facilities study no later than August 15, 1985. L (160)85.

During this period, the United States Court of Appeals for the Eighth Circuit rendered *Liddell VIII* on March 26, 1985. *Liddell v. Board of Education of City of St. Louis*, 758 F.2d 290 (8th Cir.1985). That Court in addressing the capital improvement problem determined that "the district court shall on remand direct the City Board to prepare promptly a building program, not to exceed \$40,000,000.00 to meet the most urgent capital needs of the district, with emphasis on the all-black schools and the magnet schools." The appellate court then directed the district court to conduct a hearing in order to determine that all projects in the program are necessary to cure constitutional deficiencies in the City Board's facilities. If the district court determined that question in the affirmative, it was directed to order the City Board to submit a bond issue of up to \$20,000,000.00 to the voters which was to be matched by the State. If the bond issue failed, then the appellate court stated that "the district court shall enter a judgment against the City Board in the amount determined and in an equal amount against the State." The appellate court determined further that "we recognize the need for long-term planning, and that should proceed, but the needs of the all-black schools appear to be so obvious that they should be met at the earliest possible time." The Court then went on to address further suggestions as to a capital improvement plan as to new magnet schools authorized under the Settlement Agreement.

The appellate court did not explain the basis on which it had arrived at a total of \$40,000,000.00 but apparently, it was calculated on the basis of a recommendation of the financial advisor that a bond issue of \$20,000,000.00 would have continued the debt service levy for the City Board at a rate which was required to retire a 1964 bond issue in 1984. *Liddell VIII*, at 302.

The decision in *Liddell VIII* caused some concern as well as confusion to the new Judge who had just been assigned the 13-year old complex litigation for a period less than two months and to the parties as well. At that point, the parties had agreed on the mechanics for obtaining professional help to determine the proper method for meeting the criterion in the capital improvements area of all of the city schools within the guidelines of *Liddell VII*. It finally became apparent that the mechanics and the cost for preparing a building program for \$40,000,000.00 to meet urgent capital needs of the district with emphasis on all-black schools and the

submission of the program to the Budget Review Committee, the holding of a hearing for the purpose of determining that the projects in the plan are necessary to cure constitutional deficiencies and the ultimate submission of a bond issue for one-half of that cost, would require not much less effort than if the planning was directed to the entire school system. After consultation with counsel for the parties, it appeared more feasible to attack the problem as a whole for it would be a duplication of effort and cost to plan for urgent needs utilizing an uncertain sum of \$40,000,000.00, all the while duplicating this effort with a long-range plan.

Accordingly, this Court read all of the opinions of the Court of Appeals in *pari materia* and determined that the proper function of the district court would be to urge the planning to continue to apply to the school system as a whole as this plan would produce costs obviously in excess of \$40,000,000.00 and as the framework for the payment of these costs had been established by the spirit and intent of *Liddell VII* and the other decisions of the appellate court.

The engineering firm of Zurheide-Herrmann in St. Louis, Missouri was employed and it began the facility study of all of the City Board schools. This study was necessary for long-range planning with respect to all schools and would have been equally necessary in addressing the specific \$40,000,000.00 program set out in *Liddell VIII*. Obviously, a study of all the schools must be made before it could be determined what "the most urgent capital needs of the district, with emphasis on the all-black schools" were.

693 *693 As the Zurheide-Herrmann study progressed, the lack of cooperation of the City Board and the State became evident, as was noted in an order of the District Court on August 30, 1985. L(446)85. In that order, the District Court directed that after the Zurheide-Herrmann facilities study is filed, the Court would hear oral arguments and accept briefs regarding the issue of the applicable standard to be utilized in an ultimate determination as to which capital improvements are desegregation-related. After the Court determined the applicable standard, the parties were then directed to propose a detailed capital improvement program pursuant to the standard and those needs addressed by the Zurheide-Herrmann study. The Budget Review Committee was to consider the proposal and the arguments of the parties, and then report its findings to the Court and all parties were entitled to provide input for the benefit of the Court in making an ultimate decision. This Court announced its ambitious plan to have a proposal to submit to the voters with respect to a bond issue in early 1986.

On September 13, 1985, in response to requests by both the City Board and the State, the Court stayed the time requirements relating to capital improvements because of the requests by the City Board to propose a bond issue of \$155,300,000.00 on the November 5, 1985 ballot. At that point, it was represented that the city administration and other influential entities were prepared to support this issue which the City Board felt would be adequate in and of itself to address the overall capital improvement needs of the city school system. As the Zurheide-Herrmann study had still not been completed, and as nothing could proceed further without the benefit of that study, the District Court stayed the original schedule.

The November 5, 1985 bond issue of \$155,300,000.00 was defeated with 56.2% approving the issue when 66 2/3 was required. Only 33% of the registered voters voted and in the predominantly white wards 31% voted in favor of the issue and in the predominantly black wards 88% voted in favor of the issue and 74% voted in favor of the issue in the mixed wards. Only 26% of the registered voters voted in the predominantly white and black wards, and 36% of the registered voters voted in the mixed wards.

On November 14, 1985, shortly after the election, the Zurheide-Herrmann study was filed. It contained over 50 pages of recommendations with well over 6,000 pages of supporting data.

After the study was filed, the Court addressed the schedule which had been on hold, pending the election. On January 10, 1986, a standard was established for determining what capital improvements are desegregation related. L(680)86. In setting out that standard, the Court considered the findings of Magistrate Noce on October 17, 1984, H(3422)84, the briefs and arguments of all of the participating parties, all other relevant information in the case file and the opinions of the Court of Appeals involving this case. This Court noted that "capital improvements are part of the remedial effort to eliminate the effects of a dual-system. The purpose of the total desegregation plan is to remedy the vestiges of segregation and to attract and maintain white students. The goal is to provide `quality, integrated educational opportunities to black and white students alike.'" *Liddell VIII*, at 304.

This Court continued by finding that "everyone agrees that the physical condition of many city schools is in a deplorable state. Thirty years of neglect by the City Board cannot be condoned; however piecemeal repairs will not promote the desegregation effort. Equal educational opportunity mandates that district-wide, capital facilities must be improved. There are limitations in achieving a uniform minimum level of educational utility. The city schools must meet the basic requirements of safety and health standards in order to enhance the appeal of the city schools, especially to suburban white students. Additional renovation work must be necessary for the implementation of the approved 12(c) programs."

694 The Court then set the standard, perhaps in an simplistic way, by holding that "summarily, *694 desegregation-related capital improvements are those expenditures necessary for the city schools to fulfill the bare minimum requirements of the St. Louis city safety and health codes, and to provide the facilities necessary to implement the 12(c) programs." This Court then directed the City Board to propose a desegregation-related capital improvements plan without regard to a fixed monetary amount. The City Board was further directed to give top priority to the non-integrated schools and the intra-district magnet schools, to have a school-by-school breakdown similar to the Zurheide-Herrmann report format, to consider demographic trends and all other areas which would conform to the standard announced. L(680)86.

Again, the enormity of this directive was obvious. It was equally obvious that a same or similar type of directive would have been necessary to carry out the specific \$40,000,000.00 mandate set out in *Liddell VIII*. In addition, it became apparent that substantial time would be needed to meet the District Court's directive, but the end result anticipated was thought to overcome the necessary delay. Accordingly, the City Board was to comply with the District Court's order, L(680)86, on or before May 1, 1986, and all interested parties were to respond to the proposal on or before May 16, 1986. L(734)86.

In this Court's order, L(680)86, certain guidelines for the capital improvements plan were stated. The guidelines were to be met with the data collected in the Zurheide-Herrmann facilities study. These guidelines suggested that top priority be given to nonintegrated and intra-district magnet schools, that consolidation of enrollments be considered with closing of small schools, that there be rehabilitation of buildings presently in operation only, that low priority be given to schools which probably should close within the next five years, and that plan standards be in compliance with minimum local, state and federal health and safety requirements and codes.

In response to the order, L(680)86, the City Board filed its so-called "680 Plan" on May 1, 1986. In general, the plan provided for the rehabilitation of 127 buildings for approximately \$145,000,000.00. The City Board plan used as its source material the Zurheide-Herrmann report, as well as the so-called "Billingsly Report" and the "Winsor Model". The Billingsly Report forecasts four population scenarios for the City of St. Louis. The Winsor Model is an educational prototype used to formulate plant-classroom capacity and sets standards of educational requirements for physical improvements.

The 680 Plan is based upon a projected enrollment in the City of St. Louis in 1990 of 53,399 students. This number is somewhat misleading, as it fails to account for the 10,000 approximate transfer students which could serve to reduce the resident student population to 43,399 persons. The 680 Plan of the City Board also utilizes a lower pupil-teacher ratio than that required by *Liddell IX*, which will be addressed later, or those set out in AAA requirements. Finally, the Winsor Model prototype allows for extremely generous space allocations. Otherwise, the 680 Plan basically adheres to the guidelines set forth in L(680)86.

There were various responses to the City Board's 680 Plan by the parties, some of which were favorable and others of which were not.

The Court finds that the projected population figure of the 680 Plan is, in fact, flawed because the student population estimate did not account for the 10,000 students transferred from the City to the County, and the pupil/teacher ratios conflict with the directives of *Liddell IX*. The Winsor Model is impractical when applied to an old urban school district.

Unfortunately, the Court finds that certain data in the Zurheide-Herrmann Report is flawed. There are some serious inconsistencies in the unit costs which will be addressed later. In addition, the recommendations of the 680 Plan, based upon Zurheide-Herrmann data can be considered extravagant. For illustration, suggestion was

made that all boilers in a building which were old should be replaced whether or not they were in good working condition.

695 *695 In addition to the 680 Plan calling for an approximate \$145,000,000.00 expenditure, the City Board also projected a long-range facilities plan whereby all schools in the system should be rehabilitated in accordance with the data set out in the Zurheide-Herrmann Report for \$420,000,000.00. This figure included 10% for architect costs, as well as a 5% built-in inflation cost. At least 150 buildings were involved in this proposal.

The State of Missouri chose not to analyze the Zurheide-Herrmann data or the City Board's 680 Plan, and instead, it proposed an alternative in response to the directives of L(680)86. The State's plan, L(1047)86, assumed that the 1985-1986 enrollment of city students would remain stable, and then projected a 1990 enrollment of 42,298 persons. This reflected the magnet school enrollment and the city to county transfer students. The State plan rejected the Winsor Model, and used AAA standards in calculating the classroom capacity required. The State proposed that only 67 schools be rehabilitated for a cost of approximately \$44,000,000.00. The State's plan did utilize Zurheide-Herrmann unit costs, however, it eliminated certain projects which it considered to be non-desegregation related. These involved energy efficient items, accoustical ceilings, fluorescent lighting, landscaping, removal of graffiti, handicap-accessibility items in the form of elevators, etc. The plan also did not provide for fees for architects, engineers or contingencies.

During the late summer and early fall of 1986, the Court conferred with representatives of the State and the City Board for the purpose of attempting to reach some accord as to various aspects of the problem. Thereafter, the Court was prepared to address the issues and make a final determination.

During this time, the Court of Appeals for the Eighth Circuit rendered an opinion referred to as *Liddell IX*, 801 F.2d 278, which was issued September 5, 1986. In that opinion, the Court noted that several bond issues had been submitted to the voters and rejected. The Court then directed "that upon receipt of this opinion, the Board of Education of the City of St. Louis shall prepare a capital improvement program for the non-integrated elementary and middle schools which is estimated to cost not more than \$40,000,000.00. It shall provide for the replacement or complete rehabilitation of the buildings and grounds of those non-integrated elementary and middle schools which (1) are in the worst physical condition and (2) are so located that the best available demographic studies indicate that they will continue to serve students for the foreseeable future. This program should be presented to the district court within thirty (30) days of the receipt of this decision. (The parties have advised this Court that a comprehensive study and report of repairs to the entire school system has already been accomplished.)

Thereafter, the District Court shall promptly either approve the program as submitted, or make such modifications in the program as it feels necessary to carry out the mandate of this Court. At the earliest possible date after such approval, a bond issue for the sum of \$20,000,000.00 shall be submitted to the voters of the City of St. Louis. If the voters fail to approve the issue by the required majority, the District Court shall follow the course set forth in this Court's en banc opinion in *Liddell VII*, 731 F.2d at 1323, as reiterated in *Liddell VIII*, 758 F.2d at 302." This directive in *Liddell IX* obviously created a substantial dilemma to the District Court as well as to the parties involved. The parties had spent \$800,000.00 for the Zurheide-Herrmann study, the District Court had established a standard for the parties to follow and various plans had been submitted in response to the standard and the data in the Zurheide-Herrmann Report. At the time of the issuance of *Liddell IX*, the District Court was in the process of preparing an order which would address the capital improvement program for the entire city district and the proper methods of financing the project. *Liddell IX*, on the other hand, gave specific directions for handling the matter on a piecemeal basis.

696 On October 6, 1986, in response to *Liddell IX*, the City Board filed a \$40,000,000.00 *696 capital improvement site selection plan. The plan envisioned renovation costs of seven middle schools, and eight elementary schools, which were non-integrated and the data used as to the cost was that included in the Zurheide-Herrmann study. Other parties responded to the City Board's plan, L(1093)86, and the dilemma was then placed squarely in the District Court.

This Court reasoned that even the specific mandate of *Liddell IX* could not be carried out with any more rapidity than the overall school plan, the solution for which was also before the District Court.

Accordingly, the District Court, on October 17, 1986, directed that an evidentiary hearing be held on December 8, 1986, for the purpose of having available for testimony and questioning representatives of Zurheide-Herrmann and others who have been instrumental in collecting and preparing the data and the material in the various plans before the Court. This Court stated in the order, L(1113)86, that the information needed to make a final determination as mandated by *Liddell IX*, as well as the other decisions of the appellate court, is contained in the Zurheide-Herrmann facilities study, L(598)85, City Board's desegregation related capital improvements plan, L(852)86, the City Board's long-range facilities plan, L(857)86, the State's response to these documents, L(1047)86, and the City Board's \$40,000,000.00 capital improvement site selection plan, given in response to *Liddell IX*, L(1093)86.

The evidentiary hearing was held when scheduled and at the beginning of 1987 the District Court began the task of making a final resolution of the capital improvements problem, keeping in mind the directives of all of the decisions of the Court of Appeals.

Beginning on April 22, 1986, and on sporadic occasions since that time, the Court personally visited representative schools in the system. At the time this opinion is written the Court will have been in and examined 43 of the schools involved. These include representative schools in the primary, middle and high school level and integrated, non-integrated and magnet schools. During these visitations, the Court has examined the physical facilities, observed classroom teachers and students and had personal conversations with principals and members of their staff, teachers, students and maintenance staff personnel. In addition, the Court has observed at least 20 other schools from the outside without an intimate examination of the interior.

The Court has also directed its financial advisor, Warren M. Brown, Chairperson of the Budget Review Committee (BRC), and his associate Jay Moody, to gather certain material and data for the benefit of the Court from the Zurheide-Herrmann report and other documents on file in this case. In particular, Brown and Moody were directed to inspect all of the schools in the system, analyze the Zurheide-Herrmann Report, project enrollment and consider budgetary requirements for capital improvements. The Court has carefully reviewed all of the appellate decisions in this case, as well as the District Court findings concerning capital improvements, the City Board proposals as well as those of the State of Missouri and the responses of all of the parties to those proposals, the evidence adduced at the capital improvements hearing, and all other pertinent matters in the file of this case relating to capital improvements. With that review and after the Court's personal examination of representative schools and after conferences with Warren Brown and Jay Moody concerning their assignment, the Court is now ready to enter findings of fact upon which an order can be entered.

In its order, L(680)86, this Court stated its intention to approve a district-wide plan for facilities rehabilitation, based on the following standard for desegregation-related capital improvements: The order:

1. Gives top priority to nonintegrated and intradistrict magnet schools.
2. Encourages consolidation of enrollments and closing of small schools.^[4]
- *697 3. Includes only buildings which are now in operation.
4. Abandons or gives low priority to schools which probably should close in the next five years.
5. Requires a plan of work which describes each particular facility improvement in detail (i.e., renovation or rehabilitation work on an existing building).
6. Includes projects which meet St. Louis health and safety codes.
7. Provides facilities necessary to implement approved 12(c) programs.

In response to the order L(680)86, the Board filed its Desegregation Related Capital Improvements Plan, L(852)86 (Plan 680), which met in part and exceeded in part the provisions of the order L(680)86. The Board's response to the order contains two proposals. The Plan 680, L(852)86, restates the Board's Zurheide-Herrmann (ZH) costs for rehabilitating 127 buildings, taken from L(598)85. The Plan 680, costing \$145,000,000 is presented as a subset of a comprehensive long-range facilities plan, the second part of which would cost another

\$145,000,000 plus escalation costs. [L(857)86]. The Board has left out capital costs for 17 current and future 12 (c) magnets, pursuant to L(680)86, which are subject later to 100 percent state financing. It contends that the entire plan is essential to meet desegregation objectives. The Plan 680 conforms to the Board's interpretation of the order L(680)86 which the Board believes is too restrictive.

The State's response to the order L(680)86 and to the Board's plan recites each of the elements of the Court's standard, shows how the Board allegedly exceeds it, and proposes an alternative plan to meet the State's interpretation of the order. [L(1047)86]. The State concedes an obligation to help pay for capital improvements which are needed to meet desegregation objectives, not those which generally upgrade the educational system. The State analyzed the validity of ZH improvement recommendations by visiting a sample of 40 schools. The State's architectural consultants reported that ZH unit costs for construction projects in the schools visited were reasonable. The State agrees with many projects proposed by the Board but rejects others as unnecessary to meet Court standards. The State agrees that 67 of the 127 buildings proposed by the Board should be rehabilitated (using State-approved projects). The State also accepts the Board's Billingsley enrollment projections for the year 1990 as a basis for planning.

Architects, engineers and educators who have inspected the Board's facilities find them to be fundamentally sound although in a condition of deterioration. The Court agrees with this consensus opinion. As a practical matter, these soundly constructed buildings should be the base point from which facilities improvements proceed. The most productive approach is to start from today's realities and to move forward constructively to rehabilitate existing facilities. Further, the cost of the plan to rehabilitate buildings currently in use is within the Board's financial means, as detailed later in this opinion.

Recognizing the urgent need for prompt action to rehabilitate existing school facilities in St. Louis, as noted in the Settlement Agreement, Section IV, 9-12, H(2217)83, and in numerous orders and related filings, this Court's approved capital improvements plan embraces the following objectives:

1. Provide completely rehabilitated buildings and grounds for a sufficient number of nonintegrated, magnet, integrated, and special school facilities to house enrollments projected for the foreseeable future.
2. Provide sufficient classroom space to accommodate projected enrollment in accordance with (1) court-mandated pupil/teacher ratios in nonintegrated schools and magnets and (2) current pupil/teacher ratios in integrated schools, which now exceed AAA accreditation requirements.
- 698 *698 3. Make space available to accommodate court-approved 12(c) programs such as (1) preschool rooms, kindergartens, libraries, art, music and physical education facilities, and special education rooms in all schools; (2) enrichment labs and schools of emphasis in nonintegrated schools; (3) computer labs in nonintegrated middle and high schools.
4. Consolidate enrollment, housing students in larger buildings which are in sound operating condition.
5. Provide a planning and reporting system for completion of all needed capital projects and for continuing maintenance of physical school plant.
6. Set aside a stream of revenue to meet the Board's obligation to fund capital expenditures needed to restore, repair, maintain, or enhance existing facilities. Provide matching State funding for all desegregation-related capital improvements.
7. Make funds available at the earliest possible date so that the most urgent work can begin promptly.
8. Provide for a continuing flow of revenue to be applied to desegregation-related capital projects and to the ongoing maintenance of facilities after improvements are completed.

The Court's plan is detailed under the following nine identified issues:

- (1) the target year for planning;
- (2) the projected enrollment to be used for planning purposes;
- (3) the 12(c) programs to be accommodated;
- (4) the capacity of presently operating schools;
- (5) consolidation of facilities;
- (6) the number of buildings needed to house projected enrollments;
- (7) the construction projects approvable as desegregation-related;
- (8) the budgeted cost of rehabilitation and reconfiguration projects; and
- (9) the method of financing the proposed plan.

Target Year for Projections

What is an appropriate target year for estimating Board enrollments for the purpose of determining plant capacity needed to meet constitutional requirements? This section of the plan summarizes the parties' positions as compared with Court guidelines.

Directions from the Courts

The Court directed the City Board to conduct a long-range study of the City Board's plant facilities, 'especially in light of possible changes that may occur throughout the course of this remedial effort in student and staff populations, as well as in specialized educational programs.'

L(680)86, page 2.

... [B]uildings closed as of this date are not to be considered for renovation. The vitality of open schools must be closely scrutinized in light of declining enrollment as pointed out in *Liddell VII* ... Schools with low enrollments, which in all reasonable probability should close in the next five years, are good candidates for consolidation and the capital improvement needs for some should be abandoned or prioritized accordingly.

Id., page 7.

Nonintegrated elementary and middle schools planned for rehabilitation should be "so located that the best available demographic studies indicate that they will continue to serve students for the foreseeable future."

Liddell IX, 801 F.2d at 284.

With regard to determining the facilities needed to reach a 20:1 pupil/teacher ratio, "planning should assume that by 1990, fewer than 15,000 black students will be attending non-integrated schools in the city."

Liddell XII, 823 F.2d at 1254.

699 The Board uses the year 2000 as its target year for enrollment projection. The Board believes that redevelopment in the city, improvements to school facilities and K-12 curriculum revisions toward the year 2000 will revitalize the educational program in the public schools. Significant enrollment increases will result. To plan for the *699 short-term will not embrace long-run upward trends in enrollment. Therefore, the year 2000 has been selected for program, enrollment, and plant improvement planning. If enrollment gains do not materialize, proposed plans can

be scaled down over the proposed four-year construction period without disadvantage to the plant improvement program.

The State chooses the year 1990-91 because it believes that enrollment projections beyond five years are speculative and because the desegregation-related capital improvements program should not be concerned with growth which may occur independent of any past constitutional violation. The last victim of the dual system will graduate in 1991. The State accepts Billingsley's 1990 enrollment number using the "most optimistic scenario."

This Court and the Eighth Circuit have repeatedly used the phrase "foreseeable future" in connection with capital improvements. A five-year limit (from 1986) was set in Order L(680)86. The Eighth Circuit utilized the school years 1989-1990 and 1990-1991 as target years with regard to enrollments in the interdistrict magnets and the nonintegrated schools. All these factors suggest a target year of 1990. The Court finds that for planning purposes, with regard to capital improvements, the year 1990 provides the most reasonable target year for projected enrollment analysis. Beyond 1990 is simply too speculative.

Enrollment Projection

What is a reasonable estimate of the enrollment to be served in the target year 1990-91, taking into account demographic changes and the relocation of students under the Settlement Plan?

Directions from the Courts.

"Planning and scheduling are important in view of the expected decline in enrollment."

Liddell VII, 731 F.2d at 1319.

The Board shall plan to improve those nonintegrated elementary and middle schools so located that the best available demographic studies indicate that they will continue to serve students for the foreseeable future.

Liddell IX, 801 F.2d at 284.

The goal must be to have 2,000 more students in interdistrict magnets by 1987-88 and a total of 6,000 by 1989-90.

Liddell IX, at 282.

... planning should assume that by 1990 fewer than 15,000 black students will be attending nonintegrated schools in the City.

Liddell XII, 823 F.2d at 1254.

The Board projects its target year 2000 local enrollment at 61,995 (including 3,930 county transfers). The enrollment projections used in the Plan 680 are from the 1984 Phase I report, "Population Analysis: St. Louis Public Schools," by Billingsley Consultants. Four population scenarios, with attendance enrollment scenarios, were developed. The projections ranged from continued decline to stabilization followed by moderate growth. The 680 Plan uses the most optimistic scenario of stabilization followed by moderate growth. Billingsley employed a projection technique which extracted public school enrollment from projected total school-age population, based on an assumed "capture ratio." For 1990, Billingsley Consultants project 51,584 in its "most optimistic" scenario, assuming stabilization plus moderate growth. [L(848)86, population analysis, pages 19-20]. Billingsley clearly states that its enrollment projections do not account for interdistrict transfers. But, the Board's Plan 680 states that interdistrict transfers have been removed. The Board then adds 1,815 county-to-city students, deriving a total of 53,399 for 1990. The Board's projection does not appear to deduct city-to-county transfers. [L(852)86, page 18]. This fact was later confirmed at the evidentiary hearing held in December, 1986.

The State accepts the Board's 1990-91 enrollment projection data produced by Billingsley, L(848)86, and shown on page 19 of the Plan 680 and page 27 of the State's filing. Billingsley projected a local enrollment of 51,584 for

700 the 1990-91 school year. When adjusted for interdistrict transfers, the net city enrollment would be 40,574, *700 according to the State. The State also uses current enrollment data to project enrollment, based on the 1985-86 total of 51,236. The State assumes that the 1985-86 enrollment will remain stable through 1990-91. The State then reduces total current enrollment to reflect additional city-to-county transfers and increased magnet school enrollment. After adjustment for these factors, the State predicts that 42,298 children will need to be housed in all St. Louis public schools in 1990-91. [L(1047)86, page 13].

Dr. Brown's enrollment projection for 1990 is based upon a technique he refers to as the "cohort survival method." He believes that this technique is much more realistic than the methods employed by the City Board and the State. Neither of those techniques takes into account the City Board's long-term enrollment history. Neither technique considers student survival rates which may be statistically derived from the City Board's actual experience. He believes that student survival rates will be influenced by improved learning opportunities through quality education programs, magnet schools and interdistrict transfers. He further believes that the Billingsley enrollment projections are skewed because they are based on total population estimates in the city for five-year periods 1970 to 2000. [L(848)86, pg. 14]. The trend has been steadily downward since 1950. (*Id.*, at 10).

Dr. Brown's projection procedure, the cohort survival method, recognizes the actual retention rate of first grade enrollment as it has moved through the grades since the school year 1971-72.^[5] This historical rate is applied to first grade enrollments which will produce enrollments in all grades through the year 1990-91. He extracted his data from the following sources:

1. The Board's annual October enrollment reports required by paragraph 14 of the district court order of May 21, 1980.
2. Kindergarten enrollment for the years 1971-80 as reported by the Board to the State Department of Elementary and Secondary Education (DESE). Enrollment for the years 1980-86 was obtained from the Board's annual October enrollment reports.
3. First grade enrollment for the years 1971-1986 as reported by the Board to the DESE.
4. Interdistrict transfers as reported by VICC.
5. Vocational interdistrict transfers as reported by MCC.

The enrollment projection derived from the cohort survival method indicates that 44,737 will need to be accommodated in St. Louis schools in 1990-91. Dr. Brown recommends that facilities be provided to house 31,261 regular students (5,301 in grades 9-12 plus 24,960 in grades K-8); 12,876 magnet students (4,530 local students in grades 9-12, 7,103 local students in grades K-8, plus 1,243 students from county districts); and 600 vocational students.^[6]

701 Since 1980, there has been an increasing interchange of students between St. Louis and suburban schools as a result of desegregation court orders. Interdistrict transfers will have a significant impact upon student assignments and housing. *Liddell IX* established the goal of at least 2,000 additional students in interdistrict magnets by the opening of the 1987-88 school year and a total of 6,000 students in these magnets by the 1989-90 school year. The goal is 40 percent white students from the county. Interdistrict magnet enrollment also *701 reduces the classroom space needed in both regular integrated and nonintegrated schools. Housing provided for students attending interdistrict magnets reduces the housing needed for regular enrollment.

The Court has carefully reviewed the enrollment projections of the City Board, the state and Dr. Brown and the various methods employed to calculate these projections. It appears to this Court that the most reliable estimate is derived via the cohort survival method. This procedure for analysis accurately makes allowance for students who have transferred in and out of city schools since 1980. It is also the only procedure which tracks actual enrollment prior to 1980 and adjusts the historical enrollment trend for the effects of the desegregation programs. The Court finds that this method provides the most realistic basis for a 1990 enrollment projection. Accordingly, the Court accepts a 1990 enrollment forecast of 44,737 City students.

Accommodating 12(c) Programs

What Settlement Plan 12(c) programs must be provided for in rehabilitated schools? The allocation of space for the 12(c) programs is an important factor in determining available physical plant capacity.

Directions from the Courts.

"Additional renovation work must be necessary for the implementation of the approved 12(c) Programs." L(680)86, page 6. "(The) model standard that the (ZH) engineering firm created ... is a higher standard than this Court has pronounced or will accept."

Id., at page 8.

The Board uses the Winsor Model in making its capacity projections. The model provides space for the Board's year 2000 curriculum, which includes all 12(c) program requirements. L(852)86, pages 10, 16, 20-29. It contends that its 680 Plan does not include all programs, in the absence of building additions. But it does not specifically show the program requirements by budget function as required in L(680)86.

The State claims that the Board's proposal contains elements which exceed 12(c) needs, such as elementary foreign language rooms, computer literacy labs in integrated schools, handicapped access, counseling offices for high schools and middle schools, expanded facilities for counselors, nurses, security guards, middle school science rooms, and excess storage space. However, the State used the Winsor capacity estimates in assigning its 1990-91 enrollment to buildings.

The courts have clearly enumerated 12(c) programs which require space allocations in nonintegrated and/or integrated schools. In analyzing plant capacity space has been allowed both nonintegrated and integrated schools for art, music and physical education rooms; all-day kindergarten rooms; preschool rooms; special education rooms; and libraries. Also, space has been set aside for 12(c) programs implemented in the nonintegrated schools only, as follows:

1. Rooms for school of emphasis labs and enrichment labs in elementary, middle and high schools.^[7]
2. Computer labs in high schools and middle schools.

Analysis of Plant Capacity

What school building capacity will be required to house projected enrollment in St. Louis schools by the target date? Is the capacity of presently operating schools adequate?

Directions from the Courts.

Consolidation of the city school district is the key to an effective capital improvements program. The vitality of open schools must be closely scrutinized in light of declining enrollment. Schools with low enrollments which will probably be closed in the next five years should be ^{*702} abandoned or given a low priority for renovation.

702

L(680)86, page 7.

Nonintegrated elementary and middle school classrooms should have P/T ratios of 20/1 by 1987-88, excluding remedial and compensatory program staff.

Liddell IX, 801 F.2d 280-281.

Integrated and nonintegrated high schools should have P/T ratios meeting AAA Standards (35/1). Integrated elementary and middle schools should have ratios of 30/1.

Id., at 281-282.

Magnets should have the same P/T ratios as nonintegrated schools.

Id., at 283-284.

The requirements of *Liddell VII* (i.e. P/T ratios of 20:1 in nonintegrated elementary and middle schools) are to be met at the earliest possible time.

Liddell XII, 823 F.2d at 1254.

(2) Even though the goal of twenty to one may not be fully achieved in the 1987-88 school year, it is apparent that some reduction in class size in the nonintegrated elementary and middle schools can be made at the beginning of the 1987-88 school year by making more efficient use of classrooms in the elementary and middle school buildings.

Liddell XII, at 1254.

In determining the facilities needed to reach the twenty to one pupil/teacher ratio in the nonintegrated elementary and middle schools, the parties are to assume *and* accomplish as a fact *that* by the 1990-91 school year, an additional 5,500 black city students will be attending county schools, that by the same year an additional 2,750 black city students will be attending magnet schools in the city, and that there will be some space available for additional black students in the integrated comprehensive schools. Thus, unless demographic factors clearly indicate otherwise, planning should assume that by 1990, fewer than 15,000 black students will be attending nonintegrated schools in the city.

Liddell XII, at 1254.

(4) The record reveals that many of the nonintegrated elementary and middle schools are very small. For example, sixteen nonintegrated elementary schools have enrollments of fewer than 250 students per school, with an average enrollment of 170 students. The record also reveals that many of the nonintegrated elementary and middle schools are poorly maintained and located and would be very expensive to rehabilitate.

In its long-term planning for the nonintegrated elementary and middle schools, the City Board should carefully consider closing the smaller, poorly maintained and poorly located nonintegrated elementary and middle schools and consolidating the students in either new or existing buildings that are well located and designed specifically to meet a pupil/teacher ratio of twenty to one, the goal being to achieve significant operating savings while providing the students with suitable facilities.

Liddell XII, at 1254. (See *Liddell XII*, footnote 1 regarding consolidation).

The Board states that the necessary reconfiguration required to accommodate all Settlement Plan programs will cause a drastic reduction in pupil capacity of each school. It assumes that program fitness has been minimally and essentially described in the Winsor Model. L(852)86, page 14. Building capacities, present and future, listed in the Plan 680 are based upon the Winsor Model. The Board downgrades a number of schools to a lower capacity category because the Order, L(680)86, precludes building additions which provide Winsor-model facilities. *Id.*, page 22. The Plan 680 shows inadequate building capacity by the year 2000. The unhoused enrollment is expected to be: elementary, 9,200 (page 63); middle, 637 (page 46); high school, 530 (page 35).

The State uses the Board's own building capacity data as shown in the Plan 680 to show that future enrollments can be housed in fewer buildings. These capacities allow for libraries, music, art and other special rooms and for generous storage space. They also provide for some programs *703 which the State claims are unrelated to desegregation. L(1047)86, page 11 and Attachment 1.

The State's capacity projections also assume that provision of classrooms other than in nonintegrated schools to house students in ratios lower than required by AAA standards is not required for desegregation purposes. If it is done, the State contends that the local board should pay for the extra classrooms needed to meet desired class sizes. Most of the Board's proposed 12(c) reconfiguration is not required for desegregation. *Id.*, pages 30-34. The Board's class size goals (K-15/1; elementary 20/1; middle 20/1; high school 25/1) in all schools greatly exceed *Liddell IX* mandates, AAA standards and suburban school ratios.

Dr. Brown's analysis of capacity focuses on the facilities needed to house anticipated regular enrollment in integrated and nonintegrated schools, K-12, by the year 1990-91. The procedure for determining available spaces differs for each level of instruction: high school, middle school, and elementary school. The data base for determining available school building capacity is the current number of schools serving students in instructional programs in the 1986-87 school year. Closed schools are not considered, per L(680)86.

The P/T ratio used by Dr. Brown in assigning classroom space in the integrated elementary and middle schools is 26/1. Although this P/T ratio is below the AAA standards as required by *Liddell IX*, Dr. Brown chose to keep this P/T ratio in his calculations because it is consistent with the capacity analyses used by the City Board and the State; and many of these schools are already at or near this P/T ratio. He further chose to accept the City Board's capacity estimates for the eight regular high schools currently in operation (integrated and nonintegrated). These capacity estimates are based on a P/T ratio of 28/1, which also exceeds AAA accreditation and *Liddell IX* requirements. He created a new model for the nonintegrated elementary and middle schools to account for the P/T ratio of 20/1 as mandated by *Liddell IX* and *XII*.

Dr. Brown's capacity analysis concludes that a surplus of instructional space will exist at all levels.^[8] He surmises that by 1990-91, there will be a surplus capacity in the regular high schools of 8,007; equivalent to 285 classrooms. In the integrated middle schools, a surplus of 86 regular classrooms will remain in 1990. A surplus of 99 classrooms will remain in the nonintegrated middle schools in 1990. Finally, he concludes that an excess of 75 regular classrooms will remain in 1990 in the integrated elementary schools and an excess of 53 regular classrooms in the nonintegrated elementary schools. He further found present intradistrict magnet capacities to be adequate. Since the Magnet Panel is currently studying all magnets, capacities in the Settlement Plan magnets were not considered. There is abundant space available for vocational education (O'Fallon) and for the three special program schools: Gallaudet, Gratiot and Michael.

City Board's Plan 680 assumes the same P/T ratio in all schools. This is inconsistent with the directives of *Liddell IX* and *XII*. The Winsor Model prototype is an unrealistic model for facilities planning within the purview of Court requirements for desegregation. The St. Louis City school system is an old urban school system. None of its facilities could ever approximate the Winsor Model. The Winsor Model is an idealistic contemporary educational facility. The City Board's facilities are structurally sound old buildings. Simply because they are not new does not mean they are not usable. This Court and the Eighth Circuit have repeatedly stressed the rehabilitation and utilization of existing buildings. This is the main thrust of a capital improvements plan for the St. Louis City school system. The Winsor Model impairs realistic planning, which should begin with conditions as they now exist. For example, the downgrading of schools' capacities for minor inconsistencies with the Winsor Model(s) eliminates about 900 classroom spaces from the City Board's original 704 capacities. L(852)86, pgs. 21-28. Such effects from using the Winsor Model directly conflicts with *Liddell XII*'s directives for consolidation of facilities and more efficient use of classrooms. The Winsor Model is unacceptable for capital improvements planning for the St. Louis City school district.

The class size standards used by the State in L(1047)86, p. 41, to determine building capacities are essentially the same as those cited by the Eighth Circuit. However, the State's use of City Board's capacity estimates is inadequate because it does not adjust for the pupil/teacher ratios required by *Liddell IX*. Furthermore, the State has consolidated too compactly to meet a reasonable estimate of 1990-91 enrollment and valid 12(c) program goals.

The Court finds that Dr. Brown's capacity analysis provides the most reasonable basis for capital improvements planning. It takes into account current capacity data, enrollment distribution trends, Court-mandated pupil/teacher

ratios,^[9] and housing of approved 12(c) programs. It adheres to this Court's and the Eighth Circuit's advertisements regarding efficient use of classroom space. Foremost, existing school buildings are shown to possess the capacity to house students in the near future. With realistic rehabilitation, present buildings can be turned into the educational facilities required by the Courts and expected by the teachers, students and parents in St. Louis City.

Consolidation of Facilities.

How shall the current school facilities be consolidated so that maximum effective use may be made of buildings needed in the foreseeable future?

Directions from the Courts.

Consolidation ... is the key to an effective capital improvements program ... Buildings closed as of this date are not to be considered for renovation ... Schools with low enrollments which in all reasonable probability should close in the next five years are good candidates for consolidation and the capital improvement needs for some should be abandoned or prioritized accordingly.

L(680)86, page 7.

The Board ... shall prepare a capital improvement program for the nonintegrated elementary and middle schools ... provid[ing] for the complete rehabilitation of the buildings and grounds of those ... schools which are (1) in the worst physical condition, and (2) are so located that the best available demographic studies indicate that they will continue to serve students in the foreseeable future.

Liddell IX, 801 F.2d at 284.

The record reveals that many of the nonintegrated elementary and middle schools are very small. For example, sixteen nonintegrated elementary schools have enrollments of fewer than 250 students per schools, with an average enrollment of 170 students. The record also reveals that many of nonintegrated elementary and middle schools are poorly maintained and located and would be very expensive to rehabilitate.

Liddell XII, 823 F.2d at 1254.

In its long-term planning for the nonintegrated elementary and middle schools, the City Board should carefully consider closing the smaller, poorly maintained and poorly located nonintegrated elementary and middle schools and consolidating the students in either new or existing buildings that are well located and designed specifically to meet a pupil/teacher ratio of twenty to one, the goal being *705 to achieve significant operating savings while providing the students with suitable facilities.

Liddell XII, at 1254. (See, *Liddell XII*, footnote 1 regarding consolidation).

The Board believes that 149 of its current inventory of 151 school buildings ☐ operating and closed ☐ will be needed to house students in the year 2000. L(852)86, p. 27. Further, additional buildings will be needed to accommodate anticipated enrollment, staff ratios and 12(c) programs.

The State contends that the entire 1990-91 St. Louis public school enrollment in integrated, nonintegrated, intradistrict magnets and Settlement Plan magnets can be housed in 67 school buildings. L(1047)86, pgs. 35-38.

When addressing the issue of consolidation, the Court considered three factors:

- (1) What facilities should be removed from service;
- (2) How reconfigurations can be used to provide for all program needs;

(3) What actions are needed to offset the loss of space resulting from consolidation and closing of school buildings.

After reviewing the City Board's 680 Plan, the alternative City Board plans, the State's plan, and consultation with Dr. Brown, and on-site visits, the Court determines that the following action is necessary to reduce plant capacity to provide a better cost-effective school system while still providing a quality education.

1. Close seven elementary schools whose condition makes rehabilitation impractical. These are: Adams, Hodgen, Arlington, Carver, Field, Harrison and Irving. Due to their age, condition of deterioration, and limited site space, these schools should be phased out of operation over the next two or three years as declining enrollment permits. Students should be reassigned to facilities with excess capacity as soon as a reasonable reassignment plan is developed. Meanwhile, only minimal improvements to provide weatherproof, functional educational facilities should be undertaken as necessary.

The discontinuance of Adams and Hodgen as integrated elementary attendance centers would reduce plant capacity by 27 classrooms. However, after additions proposed later in this section, the excess capacity of integrated elementary schools will permit expansion of court-approved preschool centers among neighborhood schools. Thus, no new integrated elementary schools are indicated in the foreseeable future.

The discontinuance of five nonintegrated elementary schools will reduce capacity as follows:

School	Classrooms Lost
Carver	(Old section not counted in room allocation chart)
Arlington	11
Field	14
Harrison	14
Irvin	15
	54

This loss of capacity must be offset by additions to existing facilities.

2. Consolidate elementary enrollment by closing eight small, noncontiguous branch schools as attendance centers. The fixed costs of their continued existence are excessive. These are: Cook Branch, Farragut Branch 1, Farragut Branch 2, Hamilton Branch 1, Hamilton Branch 2, Hempstead Branch, Mitchell Branch and Williams Branch.

The City Board's 680 Plan proposed discontinuing the use of these branch schools (as regular elementary schools) except it listed Dunbar Branch and omitted Mitchell Branch. The City Board further proposed using these branch schools as preschool centers. The Court has included Mitchell Branch in its closing list because this school is a small underenrolled noncontiguous branch school. However, Dunbar Branch is not included in the Court's list because it is located on the Dunbar Site and is considered a part of the Dunbar School.

706 Concerning preschool centers, the Court is convinced that the Board's anticipated preschool population (2,400 students) can be housed in neighborhood elementary schools by 1990-91. First, the proposed *706 P/T ratios for the preschool program 15 pupils per classroom per day exceed the standards of the present court-approved preschool program. Second, using neighborhood schools for preschool programs consolidates a number of small buildings (eight classrooms each) as preschool centers. Although nine of these buildings are currently available to house children, the Board chooses now to use them for other purposes. The current preschool program is housed in neighborhood elementary and middle schools. The Board's Plan 680 would reopen these nine schools which could be, but are not now used to house children. There will be enough capacity in 1990 for continued housing of an expanded preschool program in regular school buildings. Housing the preschool program in regular neighborhood schools rather than in isolated small buildings has many advantages in addition to enrollment consolidation. One important advantage is closeness. Children would have to travel farther to 20 small preschool

centers than to neighborhood elementary and middle schools. Preschool children attending regular neighborhood elementary schools would be advantaged by plant accommodations and staff services such as the following: an experienced leadership staff, art and music specialists, nurses, counselors, social workers, security guards; library and audio-visual services; physical education and lunchroom facilities. Preschool staff would also have clerical staff and office equipment available. Therefore, the present pattern for preschools should be continued.

3. Close the Franklin School where the City Board's Management Center magnet is located. Franklin is an old building with a low enrollment, located in an area largely surrounded by commercial buildings. Since this is not a court-approved interdistrict magnet, rehabilitation of this magnet site would not be considered desegregation-related.

4. Close Longfellow as an attendance center. The Court recommends that consideration be given to moving the Honor Arts program to Central High School (where the VPA magnet is now located). The Court believes that Central has sufficient capacity to house this program and the curriculum of this part-time magnet could be enriched by its incorporation in a visual and performing arts context.

The Court is well aware that it is ordering the closing of 16 buildings including approximately 154 classrooms. In order to offset this reduction of plant capacity, the following steps should be taken:

1. Construction of new elementary gymnasium facilities and reconfiguration of current playrooms (where full-size gyms are not now available). Considerable amount of instructional space will be opened by the reconfiguration of existing playrooms.^[10]

2. Reinstate two elementary schools by adapting two nonintegrated middle schools such as Ford and branch and Turner and branch. Since these middle schools served as elementary schools prior to 1980, minor changes would only be necessary. Approximately 43 additional elementary schools would thus be made available.

3. Construct 12-classroom additions to each of four nonintegrated elementary schools. These schools are: Carver, Herzog, Lexington and Lowell. Four additions, each providing twelve (12) classrooms, would increase nonintegrated elementary capacity by 48 classrooms.

Although Court Order L(680)86 did not provide for the construction of additions, the Court must now reconsider this matter as a part of the necessary consolidation and reconfiguration process. The additional construction, as set out here, would reap substantial benefits at minimal cost. These additions, therefore, will become a part of the capital improvement plan.

707 Substantial data reveals that the physical education facilities in 19 nonintegrated schools, 17 integrated schools, and seven magnet schools are inadequate for present-day physical education programs. The playrooms in these 43 schools are not comparable to gym facilities found in the county *707 districts. By providing adequate gyms, this plan not only accommodates current physical education program needs, but it also makes space available for assemblies and parent meetings, and community use. Further, it would greatly improve management of students during inclement weather. Existing playrooms may then be reconfigured to provide additional instructional space, thereby increasing the capacities of the schools affected. (Also, lunchroom space is provided as needed by use of some playrooms.) Reconfiguring 51 present playrooms in these 43 schools to provide additional instructional space, consistent with the need for safe pupil access, will make each school more efficient in size.

Available data also indicates that surplus middle school space will exist in the near future while elementary space may be tight. Readapting Ford and Turner to elementary schools makes excellent use of available space.

Carver, Herzog, Lexington and Lowell are four nonintegrated elementary schools that will have low capacity after needed nonclassroom space is set aside. They have sites large enough to accommodate new classroom wings. These wings are cost-effective measures which will increase instructional space capacity.

After these steps are taken, the St. Louis City School District's capacity should exceed its anticipated classroom needs for regular integrated and nonintegrated schools, current intradistrict and 12(c) magnets, and special and vocational schools. Reallocation of excess space district-wide will open up elementary school space for preschool centers. Excess capacity in the high schools will become available for other uses. At least four of the

eight regular high schools should become available for magnets, middle schools, or administrative space. The current regular high school enrollment could be housed in five of the larger schools. Additional attrition may release one more. The most obvious candidates for other use are: Soldan, Northwest, McKinley and Vashon. Smaller high school buildings could be reconverted to middle school centers of from 600 to 1,200 students. This would make possible closing some middle schools, thus permitting the release of additional elementary or magnet space. Two groupings of geographically close middle schools appear to have sufficient capacity to release one building in each group for other use: Group 1⁸⁷L'Overture, Mullanphy, Grant and Fanning; Group 2⁸⁸Nottingham and Dewey.

Consolidation of facilities is no longer avoidable by the City Board. Current and projected enrollments do not justify the number of facilities in operation. It simply is not fiscally prudent or educationally sound to spread limited resources so thin. Underenrolled and underutilized buildings are an enormous financial drain on the City Board. Cutting back on the number of facilities in operation is a reasonable and feasible first step to minimizing the waste of limited resources.

Number of Buildings

How many schools will be needed to house estimated enrollment on the target date? This portion of the plan addresses the number of buildings to be rehabilitated in order to accommodate the target enrollment, given adjustments to current plant capacity discussed previously.

Directions from the Courts.

Settlement Plan 12(c) magnets are a totally separate matter.

L(680)86, page 7.

Buildings closed as of this date are not to be considered for renovation.

Id.

Nonintegrated and magnet schools need earliest attention. Settlement Plan magnets are to be considered separately from other schools.

Liddell VIII, 758 F.2d 302-303.

The Board shall prepare a capital improvements program for the nonintegrated elementary schools and middle schools which is estimated to cost not more than \$40 million. (Liddell IX).

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In determining the facilities needed to reach the twenty to one pupil/teacher ratio in the nonintegrated elementary ^{*708} and middle schools, the parties are to assume ⁸⁹ and accomplish as a fact ⁹⁰ that by the 1990-91 school year, an additional 5,500 black City students will be attending county schools, that by the same year an additional 2,750 black City students will be attending magnet schools in the City, and that there will be some space available for additional black students in the integrated comprehensive schools. Thus, unless demographic factors clearly indicate otherwise, planning should assume that by 1990, fewer than 15,000 black students will be attending nonintegrated schools in the City.

Liddell XII, 823 F.2d at 1254.

(4) The record reveals that many of the nonintegrated elementary and middle schools are very small. For example, sixteen nonintegrated elementary schools have enrollments of fewer than 250 students per school, with an average enrollment of 170 students. The record also reveals that many of the nonintegrated elementary and middle schools are poorly maintained and located and would be very expensive to rehabilitate.

In its long-term planning for the nonintegrated elementary and middle schools, the City Board should carefully consider closing the smaller, poorly maintained and poorly located nonintegrated elementary and middle schools and consolidating the students in either new or existing buildings that are well located and designed specifically to meet a pupil/teacher ratio of twenty to one, the goal being to achieve significant operating savings while providing the students with suitable facilities.

Liddell XII, at 1254.

The Board lists an inventory of 151 school buildings (counting Marshall and Marshall Branch as two units) in the Plan 680 and other filings. In the original ZH plan, the board shows an inventory of 151 buildings scheduled for renovation, reconfiguration and additions at a total cost of \$320,960,655. [L(598)85, pages 32-37]. These schools are listed in the index pages which appear in numerous places in Board filings L(598)85 and L(852)86.

The Board currently operates a total of 126 schools, including six Settlement Plan magnets, to house a 1986-87 enrollment of 48,319 in integrated, nonintegrated, magnet, vocational and special schools. There are 25 schools not being used to house students in instructional programs:

School used for adult education: Clark Branch I.

Schools used for administrative offices: Busch, Curriculum, Clark Branch II, Emerson Branch, Euclid Branch, Field Branch, Kennard.

Schools leased for non-Board use: Gardenville, Howard Branch, Simmons Branch, Smith, Williams Branch II.

Schools Closed: Benton, Fremont, Monroe, Carr, Carr Lane Branch, Charless, Clinton Branch, Howard, Lindenwood, Maddox, Riddick, Windsor.

In the Plan 680 the Board indicates its intention to use a total of 145 of its schools for instructional purposes through the year 2000. The Board schedules 128 schools for rehabilitation (counting Marshall and Branch as two units), including nine reopened branch schools proposed as preschool centers. Six Settlement Plan magnets, plus Soldan § removed from the rehabilitation list per the Board's interpretation of L(680)86 § will continue in operation. Also, 10 closed schools are set aside for future Settlement Plan magnets.

The Board proposes to reopen 20 schools which are not now being used to accommodate students in instructional programs. Busch § now housing offices § is proposed, but not budgeted, for use as a relocated academic/athletic middle school magnet. (Hamilton Branch would become a preschool center.) Nine branches not housing students are proposed as preschool centers. Ten closed schools are proposed as future 12(c) magnets.

In addition to the 145 schools proposed for regular and magnet instruction, Curriculum and Kennard would house administrative offices. Gardenville would remain leased as a community center. The net result of Plan 680 is consolidation of three schools, two of which are up for sale: Carr School and Carr Lane Branch.

709 *709 The Board states that consolidation of schools cannot be accomplished because of the following factors: additional population growth; the requirements of the Year 2000 Curriculum Plan; the addition of 20 pre-schools; and a proposed district-wide reduction of P/T ratios to 20/1 except in integrated high schools (25/1). Further, if the Court restricts the Board's proposed reconfigurations and additions by enforcing the provisions of L(680)86, needed building additions would be left out. Then, 24 new schools would be needed to house enrollment in the year 2000 at an additional cost of \$141,000,000.00. L(852)86, p. 27.

The State suggests that, by consolidating attendance centers and using the biggest and best buildings in St. Louis, the entire 1990-91 regular and magnet public school enrollment could be housed in 67 buildings. Such consolidation would meet constitutional requirements through more effective utilization of buildings. Any additional buildings used to provide more instructional space should be rehabilitated through use of local funds. The State includes six current 12(c) magnet facilities in its proposal (contrary to L(680)86) on the grounds that

they will house St. Louis students, thus reducing facilities needed for integrated and nonintegrated schools. L (1047)86, pp. 35-38. The State assumes that pre-school children can be accommodated in existing elementary schools. Its list of 67 schools does not take into account four special schools now in operation.

After review of the submitted plans, review of the Zurheide-Herrmann data and consultation with the financial advisor, this Court finds that a total of 111 buildings on 106 campuses should suffice to accommodate projected enrollment in the foreseeable future at P/T ratios and with the instructional resources required by the Settlement Plan and the courts. The school closings, rehabilitation of plants, additions, and reconfigurations proposed herein will completely rehabilitate St. Louis public school buildings, providing facilities comparable to those in participating school districts. According to the analysis herein, a total of 111 schools—of which 104 would be scheduled for rehabilitation—will meet the requirements of the order L(680)86 and related orders of the Eighth Circuit. The remaining seven are court-approved 12(c) magnets (including Euclid Branch) which are to be refurbished and financed in a separate plan.

The following is a list of buildings which this Court considers obsolescent. Relevant Zurheide-Herrmann data reveals these buildings to be poorly maintained and located and too expensive to rehabilitate. These buildings are to be eliminated from the City Board's inventory as soon as possible.

	Current Use
Adams	K-5
Arlington	K-5
Benton	Closed
Carr	Closed
Carr Lane Branch 1	Closed
Charless	Closed
Clinton Branch 1	Closed
Field	K-5
Fremont	Closed
Hodgen	K-5
Harrison	K-5
Howard	Closed
Howard Branch	Leased
Irving	K-5
Longfellow	Honors Art
Maddox	Closed
Monroe	Closed
Riddick	Closed
Simmons Branch 1	Leased
Smith	Closed
Williams Branch 2	Leased

The following is a list of buildings which the Court recommends the City Board retain in its inventory as a hedge against unforeseen enrollment expansion. All are in sound condition and could be rehabilitated at a reasonable cost. These buildings could be utilized by the City Board as offices or leased while future demographic trends unfold.

710 *710

Full-sized Schools	Current Use
Busch	Offices
Curriculum	Offices
Gardenville	Leased
Franklin	Management magnet
Kennard	Closed

Lindenwood	Closed
Windsor	Closed
Branch schools	(8 classrooms)
Clark 1	Adult education
Clark 2	Offices
Cook 1	Grades K-4
Emerson 1	Offices
Farragut 1	Grades K-2
Farragut 2	Offices
Field 1	Preschool
Hamilton 1	Grades K-5
Hamilton 2	Grades K-5
Hempstead	Grades K-5
Mitchell 1	Grades K-5
Williams 1	Grades K-5

Summarily, the approved number of schools earmarked for desegregation-related capital improvements and total recommended inventory for the St. Louis City School District is as follows:

Schools recommended for rehabilitation	104
Approved Settlement Plan Magnets	7
Total facilities recommended for 1990-91	111
Schools to be retained and used for purposes other than instruction	19
Schools to be eliminated from inventory	21
Total current inventory	151

Construction Projects Proposed for Budgeting

What construction projects are necessary to meet court-approved standards for complete rehabilitation of buildings and grounds? This section of the plan discusses desegregation-related construction work required for rehabilitation of those facilities to be continued in operation for the foreseeable future. The units of work become the basis for budgeting and scheduling the facilities improvement program.

Directions from the Courts.

Projects should fulfill the bare minimum requirements of the St. Louis city safety and health codes.

L(680)86, p. 7.

A facility improvement is renovation or rehabilitation work on an existing building.

Id.

The Court will not accept construction of a new building or annex.

Id.

If the project involves a facility modification in order to provide a suitable environment for a specific desegregation activity, the Board should identify the Plan budget function which requires the improvement.

Id.

All needed physical improvements, including those which are desegregation-related, cannot be built at once. The projects having the highest priority must be scheduled for completion at the earliest possible date.

Id., p. 8.

The Zurheide-Herrmann model standard is higher than this Court has pronounced or will accept.

Id.

The City Board is to prepare promptly a building program not to exceed \$40,000,000.00 to meet the most urgent capital needs of the district, with emphasis on the all-black schools and the magnet schools.

Liddell VIII, 758 F.2d at 302.

The Board shall provide for the replacement or complete rehabilitation of the buildings and grounds of those nonintegrated elementary and middle schools which (1) are in the worst physical condition and (2) will serve students in the foreseeable future according to the best demographic studies available.

Liddell IX, 801 F.2d at 284.

711 The Board includes all construction projects proposed in its original 1985 Zurheide-Herrmann facilities study fitting the Court's standard in L(680)86. It uses the BOCA-PM code to justify a broad range of cosmetic, mechanical, structural, electrical, *711 exterior, safety and site projects. L(852)86, pp. 12-16; addendum B.

The State objects to use of the BOCA code, arguing that it is too broad and vague. The State claims that the Board's proposal exceeds the bare minimum health and safety requirements and includes expenditures which are not desegregation-related. The State accepts Zurheide-Herrmann unit costs as reasonable and agrees with many projects proposed by the Board (for the 67 schools it accepts for renovation): roofs; exterior walls; windows; doors; some classroom lights; fire alarms; sprinklers; corrective mechanical work; necessary electrical work; and health/safety items. It disagrees with other kinds of projects: site work; heating and ventilating; lights for nonclassroom areas; energy conservation; building interior painting; floors; ceilings.

The State also demurs from participation in landscaping, replacement of paving and equipment, new acoustical ceilings, removal of graffiti, facilities for handicapped persons, provision for computer rooms, counseling offices for middle and high schools, and Winsor Model standards such as elementary foreign language. L(1047), pp. 18-25.

The Order L(680)86 states that desegregation-related capital improvements are those costs needed to fulfill the bare minimum health and safety code requirements. The Board's Plan 680 goes farther than that, proposing improvements in eight areas, based on a broad interpretation of the BOCA code. Although the Plan 680 exceeds the Court's definition of standards, the proposals may approach the *Liddell IX* statement, "replacement or complete rehabilitation of buildings and grounds in nonintegrated elementary and middle schools ..." 801 F.2d at 284. It appears that the requirement of "complete rehabilitation of buildings and grounds" includes more Zurheide-Herrmann projects than the State accepts, but it does not suggest new buildings, additions to every facility, elaborate internal reconfiguration and unnecessary mechanical work. It appears to support the L(680)86 standard with a more generous interpretation of basic minimum standards. On the other hand, the State's proposal is too limited, both as to the number of buildings to be refurbished and the number of projects proposed. The State's plan would not thoroughly rehabilitate enough buildings to house even its own conservative enrollment projections.

Upon request, the financial advisor provided the Court with an analysis of cost data.^[11] This cost analysis revealed significant discrepancies in the project cost data supplied by the Zurheide-Herrmann facilities study and relied upon both by the City Board and the State. The discretion left to the individual engineering firms resulted in substantially different cost estimates for various work projects:

1. Differences in the kind of project listed as needed for rehabilitation. (One firm did not allow any funds for staff parking; another provided for new parking in six of eight schools surveyed.)
2. Differences in the amounts of funds allocated to similar kinds of projects. (One firm surveyed six elementary schools and recommended an average of \$107,487.00 for tuckpointing; another surveyed seven schools and recommended an average of \$8,069.00 for tuckpointing.)
3. Differences in the standards applied in recommending work projects. (Various A/E firms recommended from 40 to 70 foot-candles for multipurpose classrooms as a basic lighting standard).
4. Differences in the unit costs assigned to identical projects. (Costs per square foot for kindergarten reconfiguration vary from \$.17 to \$57.71).
5. In some cases it appears that buildings were not thoroughly inspected before reports were submitted. (One firm recommended completely new lighting after taking a foot-candle reading in one room only).
6. One can find boilerplate narrative which has no relationship to the particular *712 school surveyed. (One firm used the same paragraph on fire alarms for each school surveyed, but it budgeted from \$0 to \$28,500.00 for fire alarms).

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Parameters for determining repair, replacement or new installation are lacking. Even if the Court were to order full implementation of all the work projects in the facilities study, the buildings would be left in substantially differing states of repair.

Since the State accepted the Zurheide-Herrmann unit costs as reasonable, the Court instructed the financial advisor to focus on the Plan 680 cost data and to make adjustments to remove extreme discrepancies. He recommended the following adjustments:

1. Since new parking was proposed for only 24 of the 108 sites surveyed, new parking construction should be disallowed.
2. "New sodding" should be eliminated. New sodding was recommended for only four (4) schools.
3. Since Ford, Farragut and Marshall schools have recently received roof repairs, there should be removal of roof repair costs of \$383,518.00 from the proposed expenditures. Corresponding reduction for any other roofs repaired since the Zurheide-Herrmann report was filed should be made.
4. Amounts requested for gutters and downspouts should be disallowed due to recent repair work by City Board.
5. Amounts for tuckpointing in excess of \$50,000.00 per building should be disallowed. The various engineering firms proposed a total of \$2,399,531.00, an average of \$30,373.00 per building, for tuckpointing 79 buildings. Less than \$20,000.00 for tuckpointing was proposed for each of 33 buildings. No tuckpointing was proposed for three buildings.
6. The amount proposed for new lighting fixtures should be reduced by 35%. City Board proposed new lighting fixtures for 99 schools at a cost of \$10,842,104.00. New lighting was not proposed for nine schools. The various surveying firms used at least four different lighting standards and reported substantially different foot-candle readings. A reduction of 35% would still provide new light fixtures needed to meet City Board's lighting standard in all buildings and provide for cleaning, replacing, and repairing diffusers, replacing louvers and replacing inoperative fixtures.
7. Among the 108 buildings surveyed, \$0 was proposed for fire alarm systems in 27 buildings, and \$15,000.00 or less was proposed for repair or total replacement of fire alarm systems in 51 buildings. Due to extreme variances (e.g. some firms proposed over seven times as much as

others for replacement of fire alarm systems in schools of similar age and size), amounts in excess of \$15,000.00 per building should be disallowed.

8. Under the heading "electric service", \$0 was proposed for 20 buildings, and \$50,000.00 or less was proposed for 68 buildings. Amounts in excess of \$50,000.00 per building should be disallowed for the remaining buildings.

9. The City Board requests 26 new boilers at a cost of \$1,352,800.00. Presently all boilers are in working condition. \$10,000.00 should be budgeted for repairs at each of the 26 schools.

10. Energy conservation projects, i.e. all items with a payback in energy cost savings, should be eliminated from the capital improvements budget. These items include the amounts listed under the category "energy conservation", new outside automatic dampers, new air return systems and replacement of noninsulated glass. With energy conservation projects, there is a cost payback in the form of reduced operating costs for energy. There is no practical, concise, equitable procedure to account for and reimburse the State for its half of operating cost savings resulting from energy conservation measures paid out as one-time capital outlay expenditures.

11. The expenditure of \$291,500.00 for elevators (handicapped person access) should be disallowed since it was proposed only for four (4) out of 108 schools surveyed.

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*713 12. The expenditure of \$85,500.00 for wheelchair lifts at only six (6) schools should be disallowed.

The Court has carefully reviewed these deducted items and concurs with the recommendations. Items such as employee parking do not conform to this Court's standard for desegregation-relatedness. Other high cost items for isolated placement such as new sodding, elevators and wheelchair lifts are excessive. If lighting and heating is in a good state of repair, there is no need to fix or replace the systems. Wholesale replacement of boilers or lights, in working condition, only because of age is a waste of funds. Finally, with respect to the energy-conservation projects, to budget these expenditures as desegregation-related and to require joint State and City Board funding, would allow the City Board to recover not only its investment, but also that of the State. The Court finds such projects to be commendable and would recommend to the City Board to carry out these energy conservation projects on its own since it will reap the benefits in the long run; however, funds for these items will not be allotted in this facilities plan.

In a capital improvement project of the magnitude contemplated here, some attention must be given to the possibility of encountering an asbestos problem. At the hearing, the Court discussed this with all counsel off the record. Thereafter, the City Board made further investigation and after consultation with school personnel and members of the Zurheide-Herrmann firm, reported to the Court on January 6, 1987.

A primary concern regarding asbestos in schools is with "friable" asbestos-containing materials. Those in turn are materials applied to ceilings, walls, structural members, piping, boilers, ductwork and the like, which, when dry, may be easily crumbled, pulverized or reduced to powder. In that state, those materials may emit asbestos fibers, which present a potential health hazard.

In 1978 and 1979, the St. Louis Public Schools voluntarily initiated inspection and abatement action with respect to asbestos found in the schools. During that period, extensive amounts of potentially hazardous asbestos materials were removed from some five school buildings. The St. Louis Public School system was one of the first school systems in the country to voluntarily initiate action concerning asbestos. The St. Louis Public Schools generated certain records with respect to the inspection and handling of asbestos in that time period.

In 1983, the federal EPA notified the St. Louis Public Schools concerning certain statutory and regulatory requirements related to asbestos, resulting from the federal Toxic Substances Control Act. The St. Louis Public Schools at that time were advised that those regulations required all school districts in the country to inspect school facilities for friable asbestos containing building materials, to maintain records of the findings, to provide custodial employees with a guide for reducing asbestos exposure, and to notify parent-teacher organizations, or parents, of those inspection results.

In response to the EPA, the St. Louis Public Schools initiated inspections of the school facilities, and prepared and submitted inspection reports to the EPA. Discussions concerning those findings likewise were held with the EPA. The inspections revealed that all school facilities contained boiler and pipe insulating materials containing asbestos. However, as confirmed by the EPA, boiler and pipe insulating materials normally do not present a health hazard if they are properly maintained, because those materials generally are provided with protective coverings and wrappings. When those protective coverings are damaged or wear out, certain corrective action then is advisable. As a result, it was determined that asbestos containing materials with protective coatings, such as boilers and pipes, would be monitored and repaired or removed as deemed necessary, whenever a potential health hazard was determined to be present.

714 The inspections likewise revealed friable or potentially friable asbestos containing acoustical and insulating materials at some *714 seven school facilities. Based on discussions with the EPA, and with outside consultants, certain abatement actions were recommended and implemented at that time.

The St. Louis Public Schools have continued to monitor the condition of asbestos in the boilers and pipes, and the EPA has undertaken certain inspections of the school facilities since 1983 to determine on-going compliance with the Toxic Substances Control Act. As necessary, the EPA has pointed out any existing problems, for example, the posting of asbestos notices in all required places in a school facility. Apparently, the EPA has expressed no significant concerns in connection with those subsequent inspections.

The St. Louis Public Schools are engaged in on-going inspections and necessary corrective action, primarily with respect to the boilers and pipes, and have prepared and retained required reports and records. The necessary remedial action has been undertaken primarily by outside contractors. Apparently, during the Zurheide-Herrmann survey of the school facilities no asbestos hazards requiring corrective action were found.

The Court finds, therefore, that there is no discernable problem with asbestos not now being monitored and handled properly by the City Board. Should an asbestos problem arise in the implementation of the project contemplated by this opinion, the Court will review it at that time and make additional findings and orders as may be necessary to resolve the difficulty.

Recommended Capital Projects Budget

The Board's attorney pointed out cogently in closing remarks at the December 1986 hearing that the capital decisions facing the Court deal with budgeting, not with precise financial commitments. In that same vein, the proposed budget herein is to be considered as a tool for planning and action. It has been carefully developed, with the goal of precise estimating. A well-prepared budget is a policy statement which defines priorities and sets limits in the allocation of scarce financial resources. Actual experience ¶ specifically, developing plans and specifications and awarding construction contracts ¶ will certainly modify cost allocations within the constraints of the basic budget structure. Some costs will be higher and some lower than original estimates. The Court believes that this budget provides generously for all projects to rehabilitate, reconfigure and add to the school buildings needed by the Board in the foreseeable future.

Directions from the Courts.

Each project should describe a particular facility improvement in detail. A 'school-by-school' breakdown, similar to the (ZH) report format, is preferable.

L(680)86, p. 7.

"... the Board of Education of the City of St. Louis shall prepare a capital improvement program for the non-integrated elementary and middle schools which is estimated to cost not more than \$40,000,000.00"

Liddell IX, 801 F.2d at 284.

The Board estimates (ZH) costs of "code requirements" (rehabilitation only) of 127 buildings in the 680 Plan to be \$98,713,511.00 exclusive of design costs (10%). L(852)86, page 98. It derives the \$144,000,000.00 price tag as follows:

Rehabilitation of 127 schools		\$ 98,713,511
12(c) reconfigurations		10,032,097
Magnet reconfigurations		3,736,118
10 percent design fee	11,248,179	
	\$123,729,905	
Construction escalation at five percent annual rate		\$ 21,023,710
	\$144,753,615	

Additionally, the Plan 680 estimates new construction to accommodate projected enrollment increases and building additions necessary to accommodate 12(c) and interdistrict magnets to cost \$144,840,062. The capital cost estimated in the Plan 680 totals \$289,593,677. The Plan 680 suggests the Court may wish to approve capital funding at \$210,406,615 for the first four years. Later, in L(857)86, the Board estimates the total cost of its Long-Range Facilities Plan at \$420,630,007.00 (p. 97).

715 Within this total, the Board's estimate of (ZH) costs for rehabilitation of 37 elementary *715 and 14 middle, nonintegrated schools can be derived from data in its Appendix B. That cost, for rehabilitation only, is \$39,186,868.00 exclusive of design fees, reconfiguration and escalation. This would fall within limits (\$40,000,000.00) suggested by *Liddell IX* for early action.

The State believes that necessary rehabilitation on 67 buildings will cost \$44,638,830.00. The State's cost data is difficult to allocate with respect to the nonintegrated elementary and middle schools because the State's cost extrapolation applies to all 67 schools it believes to be sufficient for the near future.

Two other capital improvements programs, within the \$40,000,000.00 parameters set forth by *Liddell IX*, were submitted to the Court for consideration. The Committee for Quality Education's (CQ) proposal suggested rehabilitating (to code requirements) 30-35 nonintegrated schools in the "worst physical condition." L(1176)86. The City of St. Louis suggested rehabilitating approximately 27 nonintegrated elementary schools to meet code requirements; set aside approximately \$4,000,000.00 for quality education programs-related capital improvements; and renovate or newly construct no more than three (3) schools to approximate the Winsor Model. L(1198)86.

Working with the financial advisor, the Court developed the district-wide capital outlay budget outlined herein which will rehabilitate 104 buildings, including five contiguous branch schools and Soldan High School. Seven court-approved 12(c) magnets are omitted.^[12] Thus, although 111 schools are recommended for housing projected enrollment in the near future, only 104 are proposed for rehabilitation at this time. The City Board's own cost-data, with minor modifications, has been utilized. This budget adds a 10% design fee to the basic costs of rehabilitation, reconfiguration, and additions. The Court-approved budget for capital improvements totals \$114,717,941.00.

The following attached tables outline this budget: Table VIII shows a breakdown of budgeted costs by type of school and by major project categories. Table IX lists each of the 104 schools proposed for renovation according to its date of construction and allocates a budget for each school by major project category. Table X shows a summary of the original Plan 680 project costs which were reduced, as discussed previously.

Summary of Recommended Capital Improvements Budget

Rehabilitation and New Construction

Description	Elementary	Middle School	High School	Special	Mag
Site work	\$ 1,983,981	\$ 722,802	\$ 442,014	\$ 138,317	\$ 13
Building envelope	6,407,101	4,387,087	2,396,974	902,636	2,51
Building interior	8,620,261	2,698,547	5,807,044	989,185	2,94
Mechanical	1,328,541	1,026,602	1,944,624	39,669	75
Electrical	6,046,675	3,424,848	3,838,520	444,148	2,28
Health, safety, handicap	4,924,424	2,297,720	1,289,771	717,791	1,68
New construction					
Gyms	13,500,000	0	0	0	2,62
Classrooms	6,223,360	0	0	0	
9% escalation to update					
ZH 1984 data to 1985	0	0	1,414,704	0	35
Convert regular classrooms					
to special education rooms	540,000				
Convert playrooms to classrooms	1,390,000	0	0	0	18
Magnet reconfiguration					4,36
	<u>\$50,964,343</u>	<u>\$14,557,606</u>	<u>\$17,133,651</u>	<u>\$3,231,746</u>	<u>\$17,85</u>
10% design fee	5,096,434	1,455,761	1,713,365	323,174	1,78
Totals	<u>\$56,060,777</u>	<u>\$16,013,367</u>	<u>\$18,847,016</u>	<u>\$3,554,920</u>	<u>\$19,64</u>

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TABLE IX

Recommended Capital Improvements Budget--Distribution of Project Categories by

School	Site Work	Building Envelope	Building Interior	Mechanical	Electrical	Health, Sa Handica
Irving	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$
Adams	0	0	0	0	0	
Carver	27,546	0	0	0	0	
Hodgen	0	0	0	0	0	
Froebel	91,212	144,724	150,398	25,718	92,767	125,
Harrison	0	0	0	0	0	
Eliot	88,714	230,827	233,447	16,713	111,833	123,
Jackson	11,676	96,286	131,094	3,600	181,624	144,
Arlington	0	0	0	0	0	
Sherman	9,541	102,061	180,044	3,600	174,007	160,
Marshall and Branch	25,156	214,611	316,374	95,070	224,782	141,
Field	0	0	0	0	0	
Wyman	38,060	89,225	117,747	35,100	182,692	149,
Emerson	58,993	92,585	131,060	87,020	148,361	114,
Clay	76,834	195,768	151,876	30,106	119,302	158,
Cote Brilliante	21,880	126,948	270,524	25,014	184,417	127,

Hempstead	93,917	120,246	290,771	109,930	211,585	137,711
Shepard	76,045	156,320	238,585	14,938	130,474	153,813
Farragut	42,497	58,418	123,162	47,400	139,069	126,413
Henry	32,364	175,388	138,840	600	210,394	172,413
Sigel	75,775	144,406	238,018	59,619	190,726	113,813
Clark	24,522	99,410	238,043	53,713	130,689	98,813
Lafayette	31,800	128,296	124,638	42,000	125,359	71,813
Baden	28,608	90,860	148,888	38,900	117,748	120,413
Oak Hill	60,475	141,610	178,915	16,588	115,749	130,413
Walnut Park	41,333	191,151	122,726	16,000	111,671	91,813
Meramec	63,602	97,363	140,318	14,982	78,617	60,813
Ashland	49,400	176,963	238,037	12,425	145,633	176,413
Ashland Branch	20,981	155,971	62,712	1,700	29,196	47,813
Mann	99,662	177,438	234,658	20,821	128,494	159,813

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Dunbar	43,487	168,412	135,808	48,807	188,708	103,933
Dunbar Branch	6,073	62,197	26,994	36,650	32,138	23,243
Mark Twain	2,456	154,097	202,360	4,163	113,976	86,643
Laclede	49,865	163,369	408,907	20,138	133,353	77,123
Scruggs	93,645	104,196	184,577	21,932	137,399	100,023
Cupples	42,525	112,688	242,445	23,193	107,545	100,023
Hamilton	28,419	106,112	197,346	39,000	175,728	81,123
Roe	66,433	36,679	53,677	4,500	12,400	103,973
Buder	18,208	55,573	221,765	34,527	139,099	116,703
Woodward	27,888	40,637	110,296	22,389	111,237	120,573
Walbridge	31,556	193,356	277,472	29,731	132,743	112,593
Lowell	26,448	93,124	118,480	20,251	109,839	78,823
Shenandoah	26,410	48,995	48,799	42,126	115,515	72,733
Scullin	46,074	221,011	172,408	39,919	85,978	49,653
Cole	5,361	90,748	190,598	11,744	138,260	13,413
Gundlach	58,088	135,556	281,484	16,919	151,373	71,883
Herzog	26,794	102,116	125,336	7,575	66,660	97,643
Garfield	7,872	162,488	112,402	12,150	82,170	77,423
Banneker	10,701	93,885	215,662	37,244	118,956	61,363
Mitchell	6,719	273,718	122,445	1,500	89,519	77,093
Mitchell Branch	0	0	0	0	0	0
Peabody	26,433	162,041	192,861	10,488	14,139	86,493
Carr Lane	51,828	202,305	269,335	6,188	145,983	72,553
Jefferson	55,040	233,822	303,818	56,081	137,793	77,253
Lexington	6,020	66,623	66,403	2,500	80,555	31,593
Bryan Hill	29,045	116,478	137,708	17,269	140,420	125,083
Williams Branch	0	0	0	0	0	0
Cook Branch #1	0	0	0	0	0	0
Hamilton Branch #1	0	0	0	0	0	0
Hamilton Branch #2	0	0	0	0	0	0
Hempstead Branch	0	0	0	0	0	0
Farragut Branch #1	0	0	0	0	0	0
Farragut Branch #2	0	0	0	0	0	0

Subtotal,						
Elementary	\$1,983,981	\$ 6,407,101	\$ 8,620,261	\$1,328,541	\$ 6,046,675	\$ 4,924,421

719 *719

Webster	\$ 32,958	\$ 143,112	\$ 50,452	\$ 72,550	\$ 223,912	\$ 114,411
Blow	23,952	78,817	182,603	62,500	175,714	163,741
Fanning	14,309	75,634	157,112	68,100	138,849	127,333
Dewey	32,926	51,273	124,620	72,300	218,793	97,411
Long	22,761	150,444	169,565	83,200	175,696	129,191
Grant	10,213	112,430	140,956	47,600	112,892	102,021
Simmons	37,882	275,203	130,420	109,050	106,142	168,771
Mullanphy	53,821	298,911	181,275	91,800	275,994	135,411
Columbia	16,217	128,182	110,088	71,000	102,290	96,381
Clinton	5,019	102,103	182,902	15,200	100,230	98,381
King	24,687	132,322	212,975	57,041	98,118	101,791
Turner	22,510	214,474	84,672	4,438	40,158	85,601
Turner Branch	31,751	175,006	71,554	49,319	56,475	74,551
L'Ouverture	37,840	251,238	163,168	96,100	322,232	96,281
Nottingham	6,000	255,799	32,429	12,850	68,089	33,861
Blewett	48,609	252,078	84,070	19,988	292,082	6,241
Washington	25,920	202,581	54,335	3,050	132,857	52,041
Stevens	35,304	35,300	196,198	16,438	121,181	45,101
Cook	35,521	112,882	69,874	2,525	42,256	138,981
Ford	495	58,687	44,063	6,932	93,057	80,101
Ford Branch	64	80,827	17,922	3,257	30,313	30,011
Langston	137,745	395,092	27,341	24,800	82,523	30,141
Williams	6,579	57,446	69,792	7,388	53,649	67,111
Hickey	9,240	247,280	57,596	16,300	209,634	76,671
Stowe	30,934	251,744	47,501	2,294	96,997	77,681
Yeatman	19,545	248,222	35,064	10,582	54,715	68,421
Subtotal, Middle	\$ 722,802	\$ 4,387,087	\$ 2,698,547	\$1,026,602	\$ 3,424,848	\$ 2,297,721
Beaumont	\$ 87,889	\$ 73,548	\$ 795,440	\$ 257,646	\$ 719,033	\$ 164,961
McKinley	44,023	338,722	314,273	212,077	463,639	164,671
Northwest	18,452	29,778	249,778	24,686	215,186	246,081
Roosevelt	46,052	177,675	725,967	143,868	327,981	162,331
Southwest	77,759	407,407	668,959	104,306	351,816	224,561
Sumner	33,824	172,698	822,567	628,151	454,735	143,901
Vashon	78,092	472,778	1,357,416	472,564	730,345	20,221
Soldan	55,923	724,368	872,644	101,326	575,785	163,011
Subtotal, High	\$ 442,014	\$ 2,396,974	\$ 5,807,044	\$1,944,624	\$ 3,838,520	\$ 1,289,771

720 *720

Central VPA	\$ 34,558	\$ 244,681	\$ 502,339	\$ 336,819	\$ 447,419	\$ 154,661
Cleveland NJROTC	292,185	553,565	569,824	95,302	508,972	185,231
Health Care	0	143,151	35,917	0	54,304	48,731
Math/						
Science	3,494	55,326	154,485	33,288	84,500	158,069
Metro	25,697	78,035	67,113	0	33,036	89,171
Management Center	0	0	0	0	0	
Enright CJA	109,357	220,815	166,513	16,219	244,475	236,761

Madison	10,110	144,996	249,870	71,000	132,650	109,23
Mallinckrodt	9,851	115,092	259,916	606	16,974	79,37
Wade	16,204	58,234	140,684	13,406	119,211	99,84
AAA Academy	20,012	72,610	39,317	0	42,199	37,56
Ames	29,259	168,909	50,782	4,919	104,682	59,07
Euclid	4,677	107,832	168,277	104,263	121,766	98,69
Shaw	67,038	223,240	121,504	35,100	163,992	81,65
Stix	19,170	109,579	153,654	20,938	118,031	93,51
Waring	29,080	139,831	150,377	23,107	75,066	82,43
Wilkinson	12,126	82,367	115,327	4,320	21,731	68,73
Subtotal, Magnets	\$ 682,818	\$ 2,518,263	\$ 2,945,899	\$ 759,287	\$ 2,289,008	\$ 1,682,80
O'Fallon	\$ 80,521	\$ 623,680	\$ 652,152	\$ 0	\$ 181,177	\$ 541,27
Continuing Ed.	46,080	72,004	104,447	8,825	65,970	9,49
Gallaudet	8,884	52,515	74,943	17,800	78,563	81,44
Michael	2,832	154,437	157,643	13,044	118,438	85,57
Longfellow	0	0	0	0	0	
Subtotal, Special	\$ 138,317	\$ 902,636	\$ 989,185	\$ 39,669	\$ 444,148	\$ 717,79
Totals	\$3,969,932	\$16,612,061	\$21,060,936	\$5,098,723	\$16,043,199	\$10,912,50
Reconfigure playrooms to instruction rooms						
Regular classrooms to Special Education						
Magnet reconfiguration						

10% design fee

721 *721

TABLE X

Recommended Deductions from Desegregation-Related
Capital Improvements Plan, L(852)86, April 1986

Description	Elementary	Middle School	High School	Special	Mag
Sodding	\$ 34,391	\$ 52,000	\$ 12,369	\$ 0	\$ 13,
New parking	380,000	62,500	0	0	52,
Tuckpointing	401,878	33,367	0	0	21,
Noninsulated glass	198,754	274,047	0	7,379	60,
Roofs	159,728	223,790	0	0	
Gutters/ downspouts	82,425	26,665	1,576	8,700	2,910
New boilers	567,800	640,000	0	42,000	103,
New air dampers	699,610	73,640	0	0	63,
New air return	785,351	268,150	0	0	106,
Fire alarm	180,700	144,810	0	70,000	25,
Replace lights	1,979,158	976,084	640,687	118,025	358,
New electrical service	744,000	89,000	0	0	5,
Elevators/ lifts	180,500	100,500	103,500	0	96,000
					48

Energy conservation	1,330,893	1,157,347	793,434	111,101	557,
Building closures	6,442,043	0	0	526,869	815,
Totals	\$14,167,231	\$4,121,900	\$1,551,566	\$884,074	\$2,280,

FINANCING THE CAPITAL IMPROVEMENTS BUDGET

The capital improvements budget calls for a total expenditure of \$114,717,941.00 to rehabilitate 104 schools (excluding the Settlement Plan magnets) which will accommodate projected enrollment and desegregation programs by 1990-91. The plan of financing now to be addressed will make funds immediately available to "restore, maintain or enhance" the City Board's educational facilities, plus sustain a fiscal reserve for continued maintenance and additional capital improvements in the future.

Directions from the Court.

Funding for facility improvement shall come mainly from local revenues with one-time assistance from the State. Improvement of facilities is a Board obligation, part of its desegregation efforts.

H(2503)83, page 3.

The State is to pay one-half of capital costs necessary to restore city facilities to a constitutionally acceptable level.

Liddell VII, 731 F.2d at 1319.

In regards to a capital improvements plan, "[t]he City Board should consider the desirability of a referendum on a bond issue which can be initiated at a very early date and a subsequent bond issue for those projects to be built in later years."

Liddell VII, at 1319.

After submitting a plan to the district court (and assuming Court approval), "a new bond issue shall be submitted to the voters. If it is defeated again, the district court shall determine how the improvements will be funded."

Liddell VII, at 1319.

722 "[t]he district court's broad equitable powers to remedy the evils of segregation include a narrowly defined power to order increases in local tax levies on real *722 estate. Limitations on this power require that it be exercised only after exploration of every other fiscal alternative."

Liddell VII, at 1320.

City Board is to prepare a capital improvements plan, not exceeding \$40,000,000.00, to address the needs of the non-integrated schools especially. Upon district court approval, the City Board is to submit a \$20,000,000.00 bond issue to the voters to be matched by the State. If the bond issue fails to receive the necessary two-thirds majority, then judgment is to be entered against the City Board and the State in equal amounts.

Liddell VIII, 758 F.2d at 302-303.

After citing City Board's non-compliance with *Liddell VIII*, City Board was again directed to prepare a \$40,000,000.00 capital improvements plan for the non-integrated elementary and middle schools. After submission to the district court, and upon approval by the district court, a \$20,000,000.00 bond issue shall be submitted to the voters of St. Louis City. If the bond issue fails, the district court shall follow the course set forth in *Liddell VII* and *Liddell VIII*.

Liddell IX, 801 F.2d at 284.

In reference to a substantial balance at the end of the 1986-87 school year, "[w]e direct the district court to determine the amount of this balance and direct that not less than fifty percent of that balance be used to fund a portion of the City Board's share of the cost of providing the facilities set forth in paragraphs B(3) and B(4) of this order."

Liddell XII, 823 F.2d at 1255.

In reference to savings from consolidation of school facilities, "[t]hese savings are to be earmarked for assisting the City Board in retiring a bond issue necessary to finance its share of the capital improvements program."

Liddell XII, at 1255.

If the sources of funding identified in *Liddell XII* are insufficient to fund City Board's \$20,000,000.00 share of a \$40,000,000.00 capital improvements program for the nonintegrated elementary and middle schools, the district court shall enter an order consistent with *Liddell VII*, *Liddell VIII* and *Liddell IX* to make resources available to assist the City Board with a bond issue.

Liddell XII, at 1255.

The most important objective in this capital improvements program to rehabilitate the City Board's school facilities is to commence work immediately and continue all work until completed. With this in mind, the Court has sought to develop a plan of financing which will insure: 1) that the City Board will move forward decisively and effectively to carry out the capital improvements program; and 2) that progress will not be retarded by cost or project objections, or by insufficient cash flow.

The Eighth Circuit has often referred to a bond issue as a means of financing a capital improvements program. However, a bond issue is not the only means available to fund the capital improvements program. This Court is empowered to order a property tax increase or any other fiscal alternative it deems necessary and reasonable to remedy the situation. See *Liddell VII*, at 1320.

Although the City Board may attempt to finance its obligation for the cost of the project by a bond issue, this Court will not order it to do so. The City Board has requested this Court to exempt a capital improvements bond issue from the required two-thirds majority vote requirement. See, City Board Motion for Order Establishing Adequate Funding to Implement Facilities Plan, L(1364)87. This Court is not prepared to begin carving out judicially mandated exemptions to state statutes in which constitutionality is not at issue. Furthermore, although the two-thirds majority *723 vote requirement has prevented the passage of several bond issues, these bond issues were for exorbitant amounts. If the City Board had heeded the directives of the Eighth Circuit for smaller bond issues, the two-thirds majority vote requirement may have well been met. Since a bond issue is not the only fiscal option open, this Court will not interfere with the State constitutional taxing limitations presently in force.

A property tax increase was another option explored and rejected by the Court.

Liddell XII directs the district court to determine the amount of the fund balance at the end of the 1986-87 school year with the parties to determine the annual savings from consolidating school facilities. There is no doubt that these two sources will substantially assist the City Board in funding its share of a capital improvements program. However, it will take months, even a year to make these determinations. These sources of funding will have significant impact in the years to come, but simply are not available now to grant immediate relief. The Court believes that there are other means to provide the required funding immediately.

The Court requested the Financial Advisor to investigate the possibility of the City Board funding its capital improvements costs from its own present reserves. The Financial Advisor was instructed to analyze the City Board's revenues and expenditures (for the last year available), to compare its expenditure patterns with other school districts, and to identify areas where funds could be freed up for capital outlay. The City Board has conceded that it does have unencumbered excess funds available, which this Court and the Court of Appeals believe might be sufficient to assist the City Board in funding its part of the capital improvements program now. See, *Liddell XII*, at 1255, footnote 2.

The Financial Advisor utilized financial data for his analysis from the city and county school districts' Annual Secretary of the Board Reports and from the Financial Report for Missouri Public Schools, Fiscal Year 1985-86. The enrollment data used in his analysis are from District Profiles V and VI, Reports P.S.026 PE and P.S.026 PF, dated December 19, 1986. There are two terms used frequently in the Financial Advisor's data compilation: "eligible pupil" (EP) and "current operating expense." They are defined as follows:

1. *Eligible pupil* (EP) is the unit measure used in Missouri school accounting. It is a number derived from averaging enrollment and attendance. It is less than reported enrollment but greater than average daily attendance. EP is the basis for distribution to local districts of most state school funds. The 24 suburban districts had an EP count of 127,343 during 1985-86. The city school system had an EP count of 49,151. Use of EP as the cost accounting unit permits expenditure comparisons between districts of different sizes.

2. *Current operating expense* is defined by the DESE as the total expenditures for instruction and support services, objects 6110 through 6400 on the Secretary's Report, less revenues from food services, student activities and payments from other districts. In effect, current expenditures are those made during the current year. Expenditures in excess of receipts for partially self-supporting programs — food service and student activities — are included in order to reflect only the district subsidy for these functions. Expenditures involving long periods of time — capital outlay including instructional equipment; debt service principal and interest; facilities acquisition and construction are excluded. Other excluded expenditures are those which are not made by all districts: adult basic education, adult continuing education, community services.

724 *724 The Court's review and correlation of the Financial Advisor's data^[13] reveals that the City Board's present allocation of expenditures to capital outlay is less than one-tenth (1/10) of one percent (1%). Fiscal year 1985-86 (unaudited) had expenditures of \$242,000,000.00 with disbursements of \$141,423.00 from the building fund and \$25,000.00 from the debt service fund. These disbursements amount to only seven hundredths (7/100) of one percent (1%). A summary of receipts and expenditures is provided in Table XI (excepted from Attachment 6) attached.

A comparison of 1985-86 expenditure patterns in participating county school districts indicates that the Board has resources which may be allocated to capital outlay without damage to its instructional program. The county districts, despite their tight budgets, have been able to do so. The comparisons depict the following:

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TABLE XI

SUMMARY OF RECEIPTS AND EXPENDITURES
JULY 1, 1985 THROUGH JUNE 30, 1986

			RECEIPTS	
FUND	DESCRIPTION	JUNE	YR. TO DATE 6/30/86	AVAILABLE BALANCE
GENERAL FUND				
66-116	Incidental	\$ 3,747,377	\$ 77,483,880	\$ 9,691,45
66-126	Teachers	6,459,512	91,193,696	3,592,05
66-136	Building	1,436	88,521	334,65
66-156	Free Textbook	-0-	2,972,989	88,08
66-246	Adult Education	7,282	1,479,018	1,016,78
66-286	HB 474 Reimbursements	200,000	2,352,644	137,52

64-346	Metro Deseg. Stlment Plan 83/84	-0-	-0-	27,87
65-346	Metro Deseg. Stlment Plan 84/85	-0-	1,063,850	6,389,32
66-346	Metro Deseg. Stlment Plan 85/86	3,838,691	24,350,073	365,73
64-536	Metro Deseg. Stlment Plan 83/84	-0-	196,956	(191,97
65-536	Metro Deseg. Stlment Plan 84/85	-0-	167,182	1,238,58
66-536	Metro Deseg. Stlment Plan 85/86	1,310,101	10,005,349	45,84
64-556	Voc. Educ. Deseg. Stlment Plan 83/84	-0-	-0-	1,85
65-556	Voc. Educ. Deseg. Stlment Plan 84/85	579	13,056	211,69
66-556	Voc. Educ. Deseg. Stlment Plan 85/86	262,896	807,794	-0-
63-576	IntraCity Deseg. Plan 82/83	-0-	-0-	42,65
64-576	IntraCity Deseg. Plan 83/84	-0-	405	76
65-576	IntraCity Deseg. Plan 84/85	-0-	208,726	3,012,17
66-576	IntraCity Deseg. Plan 85/86	2,498,797	16,197,961	3,671,18
	TOTALS	<u>\$18,326,671</u>	<u>\$228,582,100</u>	<u>\$ 29,676,27</u>
66-616	SCHOOL BOND DEBT REVENUE FUND	-0-	-0-	25,00
66-166	ESCROW FUND	1,870,260	22,610,258	2,562,25
66-516	SCHOOL LUNCHROOM FUND	1,179,074	13,074,266	2,097,36
	FOUNDATION, CONTRS. & INC.	100,096	1,516,805	3,171,33
	FEDERAL PROGRAMS	1,483,211	17,350,121	539,99
	GRAND TOTAL	<u>\$22,959,312</u> =====	<u>\$283,133,550</u> =====	<u>\$ 38,072,21</u> =====

726 *726 1) The total local tax rates for the City Board and the average county district were similar: City Board ☐ \$3.16 and average county district (ACD) ☐ \$3.14. However, the ACD tax rate included \$.44 (14%) for building and debt service funds, while the City Board's tax rate included \$0 for these funds. If the City Board had included \$.44 for building and debt service funds, it could have raised over \$8,000,000.00 for capital expenditures.

2) The City Board has more total current receipts (local taxes, state funds ☐ including desegregation funds, and federal funds) per EP than the ACD.

3) The City Board spends more per EP than the ACD: City Board ☐ \$4,288.00 per EP; ACD☐\$3,752.00 per EP. It breaks down as follows:

City Board \$2,456.00 per EP for instruction;
City Board \$1,832.00 per EP for support services;
ACD \$2,337.00 per EP for instruction;
ACD \$1,415.00 per EP for support services.

4) The City board spent in excess of \$26,000,000.00 more than ACD for instructional and support services.

5) The City Board staff ratios compare favorably with those of the ACD.

The Court then compared the City Board's total costs with those of the four largest county districts (Parkway, Hazelwood, Rockwood, and Ferguson-Florissant). The total EP in these four districts was 57,403 compared to the City Board's EP of 49,151. The Court found that:

1) The City Board spent an equated total amount of \$18,000,000.00 more than the four largest county districts in 1985-86.

2) The City Board spent slightly more (\$3,000,000.00) for instruction than these same districts.

3) The county districts spent \$19,000,000.00 more than the City Board for facilities acquisition and debt service.

4) The City Board spent \$34,000,000.00 more than these county districts for support services and community programs.

The purpose of this comparative analysis by the Court was to compare the City Board's revenues and spending patterns with those of the county districts to note variations which might suggest reallocation of resources to fund the City Board's share of capital improvements. The Court realizes that this analysis is not truly equitable because each school district is unique in its demographic conditions, community aspirations, financial resources and instructional needs. However, this analysis does clearly illustrate the difference in priorities set by the City Board's budget and the county districts' budgets. Expenditures express a school district's priorities. When funds are allocated to expenditure categories, purposeful decisions have been made reflecting a school district's objectives and priorities in implementing its educational program. The City Board's budgets have historically failed to allocate resources to a building fund despite the deteriorating condition of its facilities. The county districts have always allocated monies to a building fund. It is time for the City Board to reappraise its management decisions on resource allocation.

This Court is convinced that the City Board has within its means the funds necessary for its share of the capital improvements program. It is obvious that if the City Board initiated cost cuts, especially in the support services areas, and strove to develop an expenditure pattern similar to those of the large county districts, funds could be freed up for capital expenditures. Furthermore, the closing of the smaller facilities and scheduling of all students more efficiently should assist the City Board in making monies available for capital expenses.

Accordingly, the Court now sets forth the funding formula and schedule for the implementation of a capital improvements program for the schools in the City of St. Louis:

1) The budget for the capital improvements program is set in the amount of \$114,717,941.00, subject to modification by this Court. The City Board and the State of Missouri shall share equally the costs of the capital improvements program. Their respective costs are \$57,358,970.50.

727 *727 2) The City Board is to establish a separate special Capital Projects Fund (Fund) as an accounting vehicle for administering the capital improvements program. The City Board will place in the Fund: (1) State receipts pursuant to this Order; (2) the proceeds from any local capital improvements bond issue; (3) receipts from a building improvements revenue allocation, such as a sales tax or other revenue; and (4) donations from outside sources. Monies deposited into the Fund shall be invested as provided by State law. Expenditures will be made solely for the purpose of carrying out the activities outlined in this Order. All receipt to and expenditures from the Fund shall be reported annually to the Court following a fiscal year independent audit, in accordance with court-approved procedures for desegregation accounting and reporting. The City Board and the State shall share equally the costs of the independent audit.

3) The State will make three installment payments, each in the amount of \$19,119,656.83. The DESE shall timely certify to the Commissioner of Administration (Commissioner) the amount needed to make the State's payments and to whom the payments are to be made. Within two working days after such certification, the Commissioner shall issue warrants in the amounts and to the party set forth in the DESE's certification. Within two working days of receipt of each of said warrants, the Treasurer of the State of Missouri shall issue and sign checks in the amounts and to the party set forth in said warrants.

4) The State's first payment of \$19,119,656.83 shall be made thirty-one (31) days from the date of this order. If an appeal is taken, the State's first payment shall be made thirty (30) days from the date of affirmance. In the event of reversal, the Court will modify as directed by the Eighth Circuit and will set a new time for payment. After the first payment is made, the second and third payments shall be made annually from the date of the first payment. The State's one-time funding obligation to share the costs of a capital improvements program for the St. Louis City Schools shall be deemed fulfilled and satisfied upon the deposit of its third and last payment.^[14] The State's payments are exclusive of its funding obligation for the capital costs of Settlement Plan magnets.

5) The City Board shall make eight (8) installment payments, each in the amount of \$7,000,000.00. A ninth (9th) payment shall be made in the amount of \$1,358,970.50. These payments shall be made annually according to

the same schedule as outlined above for the State. Thereafter, the City Board shall continue to deposit annually (until further notice of the Court) the amount of \$5,000,000.00 into the Fund for continued maintenance and additional capital improvements. Interest on the unused balance of State and City Board payments shall be credited against the capital costs funding obligation of each entity regarding Settlement Plan magnets, or in some other way as the Court may later direct.

6) This Court believes that cash flow should meet construction cost pacing, and that all construction projects (as prescribed by this Order) should be completed within six (6) years from the date of the final order.

7) In the event construction costs become due when the Fund's monies are insufficient to meet these costs because the City Board's payment is not yet due, the City Board and the State shall enter into a loan agreement. In so doing, the State shall loan the City Board the necessary funds to meet the due and owing construction costs, and the City Board shall repay the loan amount, plus interest, out of its forthcoming payment. The City Board's last payment (i.e. 9th payment) shall include, in addition, any interest paid out of prior payments and not used to fund construction projects. Interest on the loan amount shall be calculated as simple interest from the date of the loan until date of repayment. The rate of interest shall be 1% less than the average of the commercial prime lending rates of the Boatmen's National Bank of St. Louis, Centerre Bank *728 N.A. and Mercantile Bank N.A., during each year preceding the due date of City Board's forthcoming payment. For example, if City Board's payment is due on July 1, 1992, then the loan interest rate is 1% less than the average of the three named banks' commercial prime lending rates for the year beginning July 1, 1991, and ending July 1, 1992.

The City Board is not obligated to borrow the funds from the State. It is free to secure the funds from other sources or to make a loan arrangement elsewhere if the terms are comparable or superior to the conditions set forth above.

8) The Court reserves the right to appoint a committee to monitor the construction projects and the Fund. The committee members and their duties will be announced when a final order is entered. However, the Court emphasizes that the City Board is responsible for the implementation of this capital improvements program, subject to the monitoring of the committee to be named later.

9) The City Board is to begin immediately to prepare specifications for major improvement projects, pursuant to this court-approved capital budget, in the nonintegrated elementary and middle schools, Cleveland, Central and the other intradistrict magnets. The following priorities should be set, stressing early commencement of projects which will seal the buildings from further deterioration. Most of these projects should be scheduled so as not to greatly interfere with the students' education, particularly the urgent work of sealing the buildings' exteriors as follows:

- (1) Roofs;
- (2) Tuckpointing;
- (3) Exterior caulking and painting;
- (4) Repair and replacement of windows;
- (5) Exterior doors;
- (6) Repair of safety hazards on site.

Since a great many of the City Board's proposed rehabilitation projects involve similar operations in a number of schools, it seems more cost-effective to group schools for bidding purposes and to develop plans and specifications which can be used in a number of similar applications. Examples are: roof repair and replacement; tuckpointing; caulking, scraping and painting of outside wood surfaces; boiler inspection and repair; electric service to schools, classroom lights; ceilings, interior paint; basic specifications for elementary gymnasiums.

The Court directs that the Board solicit bids for similar projects to be completed in groups of schools in close geographic proximity, where the projects involve a particular expertise. In this way a number of contractors can

be put to work simultaneously in their area of expertise. Basic work can be completed more quickly, and useful cost comparisons can be made.

After completing most urgently needed plans and specifications, the Board should plan for orderly completion of the entire program approved by the Court. The Board's annual dollar allocation, plus the State's up-front monies (and subsequent payments) should provide monies to complete all basic needs in six years.

10) The City Board shall report to this Court semi-annually the work projects completed, work in progress and work scheduled for future completion.

The extent of the responsibility of the State of Missouri to fund capital improvements for the St. Louis city schools must be reexamined at this juncture. As stated earlier in the opinion, this Court is mindful of the finding in *Liddell VII, supra*, at p. 1319 "that the State had an obligation to pay one-half of the costs of the capital improvements program necessary to restore the city facilities to a constitutional, acceptable level...." This Court now holds that the payment by the State of one-half of the sum required by this opinion meets that obligation except perhaps for possible funding requirements of 12(c) magnet capital improvements which will be considered after examination of the upcoming long-range magnet review committee report and recommendation.

729 In fact, after examination of evidence now available but not before the Court when *Liddell VII* was handed down, it might appear the State of Missouri had no *729 desegregation-related capital improvement obligation in any event.

It is no secret that the City of St. Louis, residentially, is a segregated community. An area constituting a corridor running west from the Mississippi River to the west boundary line of the city bounded generally on the North by Delmar Boulevard and U.S. Highway 40 in the south, is inhabited almost equally by blacks and whites. Almost 95% of the city residents to the north of the corridor are black and about the same percent to the south are white.

The media observe this in every election report when the so-called traditionally black wards and white wards are referred to. This Court and the Court of Appeals have observed this fact in prior opinions, as well.

Yet, the deplorable condition of the St. Louis city schools is as evident generally in the south as in the north. It is as evident in those schools attended mainly by white students as it is in those schools in which blacks constitute the majority of the enrollees. It is also evident in the mixed schools as well as in the intra-magnet schools. These facts are established as a result of this Court's personal touring and observation of the schools and on the basis of all the evidence now presented.

If there is fault, it rests with the School Board which through the years has failed to allocate any appreciable amount of its revenue to maintain the physical integrity of its schools whether the schools are attended largely by whites or blacks or mixed or whether the schools are in an area in which blacks or whites are the predominant residents.

Downtown St. Louis is an exciting place. It is teeming with new construction and a refurbishing of hallowed landmarks. The development and use of the greatest natural resource, the river, is being taken advantage of. The service industry and its direct and indirect benefits abounds. Full attention is being directed to the safety and well being of those who live or work there.

The regular upgrading of the city school system remains to be accomplished in order for this community to be competitive with other thriving metropolitan areas and in order to guarantee excellent educational opportunities to all persons whatever their race or minority background.

The refurbishing of the school facilities as provided for herein is a large step in the right direction. What is mandated here, however, satisfies only constitutional requirements. Utilization of modern engineering and architectural approaches and aesthetic potential as well as sound, economic structural facilities with first class equipment must come from other sources. Thus, this Court is requiring permanent, regular funding for improvements. But, the sum required may be only enough to satisfy constitutional obligations.

An enterprising school board can find innovative ways to achieve those goals of structural upgrading beyond the minimum standards contemplated by the constitution, that is, for sound and safe structures. But this worthy

objective requires support of a substantial magnitude. Business, organized labor, the city administration and the community as a whole must join in a concerted effort if the St. Louis educational system is to be a part of the lustre that is beginning to shine downtown. Such an endeavor, however, does not require judicial involvement.

ORDER

In accordance with the Memorandum filed herein this date,

IT IS HEREBY ORDERED that the City Board shall implement the capital improvements program for the schools in the City of St. Louis as set forth in the accompanying memorandum.

IT IS FURTHER ORDERED that the budget for this Court-approved capital improvements program is set in the amount of \$114,717,941.00, subject to modification by the Court. The City Board and the State shall share equally the costs of the capital improvements program. Their respective costs are \$57,358,970.50. Funding of these costs and payment of costs shall be in accordance with the accompanying memorandum.

730 *730 IT IS FURTHER ORDERED that the City Board and State shall carry out fully their obligations as set forth in the accompanying memorandum.

IT IS FURTHER ORDERED that the City Board's Desegregation-Related Capital Improvements Plan ("Order 680 Plan"), L(852)86 and the State's Alternative Capital Improvements Plan, L(1047)86 be and are DISAPPROVED as set forth in the accompanying memorandum.

IT IS FURTHER ORDERED that the City Board's \$40,000,000.00 Capital Improvements Plan (pursuant to Court of Appeals' mandate), L(1093)86 be and is DISAPPROVED as set forth in the accompanying memorandum.

IT IS FURTHER ORDERED that the following motions filed by the City Board be and are DENIED.

1. L(854)86 Motion for Order Requiring Funding of Desegregation-Related Capital Improvements Plan ("Order 680 Plan");
2. L(1192)86 Motion for Approval of Facilities Plan (Long-Range Plan L(857)86);
3. L(1364)87 Motion for Order Establishing Adequate Funding to Implement Facilities Plan.

IT IS FINALLY ORDERED that the City Board's Motion for Reconsideration of Provisions of Court Order L (680)86, L(855)86, be and is GRANTED in part only insofar as the Court will allow the construction of additional classrooms and new gymnasiums as set forth in the accompanying memorandum.

ATTACHMENT 1

Cohort Survival Enrollment Projection

Calculation of Enrollment Projections

The Board, through Billingsley Consultants, projects 1990 enrollment at 53,399. The technique employed was to extract public school enrollment from projected total school-age population, based on an assumed "capture ratio." The State assumes that 1985-86 enrollment will remain stable through 1990-91, and it reduces total enrollment to reflect additional city-to-county transfers and increased magnet enrollment. The State projects 1990-91 enrollment at 42,298. Neither technique considers changes in student survival rates resulting from improved opportunities through quality education, magnet schools and interdistrict transfers.

Sources of data. Enrollment data used in this analysis was obtained from several sources:

1. The Board's annual October enrollment reports required by paragraph 14 of the District Court order of May 21, 1980.

2. Kindergarten enrollment for the years 1971 through 1980 as reported by the Board to the DESE. Enrollment for the years 1980 through 1986 was obtained from the Board's annual October enrollment reports.

3. First grade enrollment for the years 1971 to 1986 as reported by the Board to the DESE.

4. Interdistrict transfers as reported by VICC.

5. Vocational interdistrict transfers as reported by MCC.

Current enrollment. Table 1 shows the October enrollment in the St. Louis public schools reported by the Board for the years 1980 through 1986. The Board's reporting format groups elementary (K-8), secondary (9-12) and special education. Enrollment is not reported by grade except for kindergarten.

Table I

Actual October Enrollment by Level

St. Louis Public Schools

Year	Kindergarten	Grades 1-8	Grades 9-12	Total Enrollment
1980	4,060	39,955	18,735	62,750
1981	4,090	38,478	18,007	60,575
1982	4,351	36,545	18,301	59,197

731 *731

Table I

Actual October Enrollment by Level

St. Louis Public Schools

Year	Kindergarten	Grades 1-8	Grades 9-12	Total Enrollment
1983	4,264	35,926	16,210	56,400
1984	4,629	34,029	14,406	53,064
1985	4,674	32,934	13,628	51,236
1986	4,485	31,473	12,361	48,319

Resident enrollment. These enrollments do not accurately reflect the Board's resident student population because of student relocation resulting from court orders. Table II shows interdistrict transfers resulting in an enrollment decrease for the St. Louis public schools.

Table II

Interdistrict Transfers

	1980	1981	1982	1983	1984	1985	1986
City-to County							
Kindergarten	0	0	0	43	177	252	387
Grades 1-8	0	0	0	1,765	3,290	4,609	6,003

High School 9-12	0	0	0	688	1,403	2,016	3,293
Vocational 9-12	0	36	132	178	172	175	160
County-to-City							
Kindergarten	0	0	0	18	17	28	30
Grades 1-8	0	0	0	247	339	381	406
High School 9-12	0	0	0	104	143	160	171
Vocational 9-12	0	4	52	77	134	107	179
Total K-12	<u>0</u>	<u>4</u>	<u>52</u>	<u>446</u>	<u>633</u>	<u>676</u>	<u>786</u>

To avoid distortions in survival rates, it is necessary to restore the city schools' enrollment to what it would be absent any student relocation resulting from court orders. City-to-county transfers should be added, and county-to-city transfers should be deducted. The VICC sending school analysis reports that 11 percent of the city-to-county transfers were from private and parochial schools. Therefore, only 89 percent of the transfers was added to the city enrollment in this analysis. Table III shows city enrollment for the years 1980 through 1986 adjusted for interdistrict transfers. Resident enrollment has declined in excess of 10 percent since 1980. However, the enrollment for the past three years shows a very modest decline.

Table III

Resident October Enrollment by Level
(Adjusted for Interdistrict Transfers)

Year	Kindergarten	Grades 1-8	Grades 9-12	Total Enrollment
1980	4,060	39,955	18,735	62,750
1981	4,090	38,478	18,007	60,575
1982	4,351	36,545	18,301	59,197

732 *732

Table III

Resident October Enrollment by Level
(Adjusted for Interdistrict Transfers)

Year	Kindergarten	Grades 1-8	Grades 9-12	Total Enrollment
1983	4,264	37,250	16,819	58,353
1984	4,770	36,618	15,550	56,938
1985	4,870	36,655	15,330	56,855
1986	4,799	36,410	15,102	56,311

Historical data. This analysis employs a cohort survival technique to observe trends over a period of years. It then uses the observed trends to project enrollment by level through the schoolyear 1990-91. Table IV shows October kindergarten enrollments for the years 1981 through 1986 adjusted for interdistrict transfers. Table V shows October enrollment for first grade for the years 1971 through 1986 adjusted for interdistrict transfers. A very irregular and unpredictable relationship was observed between entering kindergarten and first grade classes. For

example, in 1971 the Board reported kindergarten enrollment at 6,973. This class produced a first grade enrollment in 1972 of 11,351, an increase of 63 percent.

Table IV

Kindergarten October Enrollment
(Adjusted for Interdistrict Transfers)

Year	Actual Kindergarten Enrollment	Add City to County	Deduct County to City	Adjusted Resident Kindergarten Enrollment
1971	6,973	0	0	6,973
1972	6,806	0	0	6,806
1973	6,187	0	0	6,187
1974	5,968	0	0	5,968
1975	5,599	0	0	5,599
1976	5,265	0	0	5,265
1977	5,218	0	0	5,218
1978	4,809	0	0	4,809
1979	4,517	0	0	4,517
1980	4,060	0	0	4,060
1981	4,090	0	0	4,090
1982	4,351	0	0	4,351
1983	4,264	38	18	4,284
1984	4,629	158	17	4,770
1985	4,674	224	28	4,870
1986	4,485	344	30	4,799

* 89% of actual transfers (11% from private/parochial schools)

733 *733

Table V

First Grade October Enrollment
(Adjusted for Interdistrict Transfers)

Year	Actual Kindergarten Enrollment	Add City to County	Deduct County to City	Adjusted Resident Kindergarten Enrollment
1971	11,833	0	0	11,833
1972	11,351	0	0	11,351
1973	9,682	0	0	9,682
1974	8,280	0	0	8,280
1975	7,773	0	0	7,773
1976	5,961	0	0	5,961
1977	7,427	0	0	7,427
1978	6,984	0	0	6,984
1979	7,195	0	0	7,195

1980	6,116	0	0	6,116
1981	5,775	0	0	5,775
1982	5,430	0	0	5,430
1983	5,241	158	13	5,386
1984	5,013	305	19	5,299
1985	5,040	418	22	5,436
1986	4,818	533	23	5,328

*89% of actual transfers (11% from private/parochial schools)

Enrollment projection. First grade enrollments are used in the cohort survival technique employed in this analysis because (1) there is a wide variance between kindergarten and first grade enrollments; and (2) first grade students may be considered to have committed to public schools. The survival rate of first grade students was observed as the students moved through the grades. The survival rates were determined for a number of years, and the rates and trends were employed to predict enrollments. The grade configuration used in this analysis is kindergarten, grades 1-8 and 9-12 is the reporting format used by the Board in the annual October enrollment report.

Students entering first grade in September 1975, 1976, 1977 and 1978 were reported in the secondary enrollment, grades 9-12, in October 1986. The survival rate was determined. This procedure was repeated for secondary enrollments reported in October 1985, 1984, 1983 and 1982, and the following survival rates were determined:

Year	Survival Rate
1982	44.5%
1983	45.4
1984	49.1
1985	52.1
1986	53.7

The retention rate has been steadily improving at an average annual rate of 1.84 percent over a five-year period. In predicting secondary enrollment through the year 1990-91, the survival rate of 1986 was increased by 1.84 percent for each year.

A similar procedure was employed for observing survival rates for grades 1-8. Kindergarten enrollment was not included in survival rate projections because kindergarten enrollments have fluctuated widely over the past years. Estimated kindergarten enrollment, adjusted for interdistrict transfers, was predicted separately and added to the predicted enrollment in other grades.

The following survival rates were determined for grades 1-8:

Year	Survival Rate
1982	69.4%
1983	74.1
1984	73.8
1985	77.0
1986	79.2

The retention rate for grades 1-8 has been steadily improving at an annual rate of 1.96 percent over a five-year period.

In predicting elementary enrollment through the year 1990-91, the survival rate for 1986 was increased by 1.96 percent for each year. Actual first grade enrollments were employed in determining survival rates for

secondary students through the year 1990-91. Estimated first grade enrollments were used for predicting enrollments for grades 1-8 through the year 1990-91. First grade enrollments have averaged 5,376 for the past five years with a variance of 77 or fewer students from the average each year.

Table VI shows the projected regular enrollment by level, magnet enrollment by level and vocational enrollment. The magnet enrollment total of 11,633 when added to the 1,243 county-to-city transfers totals 12,876. This is the magnet enrollment projected by the Board in L(852)86, page 19.

Table VI
Summary Enrollment Projections by Level

1990-91			
Regular Enrollment			
High School (9-12)	5,301		
Middle/Elementary (1-8)	21,460		
Kindergarten	4,500		
Subtotal			31,261
Magnet Enrollment			
High School (9-12)	4,530		
Elementary/Middle	7,103		
Subtotal			11,633
Vocational			600
County Students			1,243
Grand Total			44,737

Cohort Survival Analysis and Calculation

Procedure for determining secondary survival rates

The October 1982 secondary enrollment totaled 18,301 as reported in the October enrollment report. No adjustment were necessary for interdistrict transfers. The twelfth grade students entered first grade in 1971; the eleventh grade students entered first grade in 1972; the tenth grade students entered first grade in 1973, and the ninth grade students entered as first graders in 1974. Entering first grades:

Year	Enrollment
1971	11,833
1972	11,351
1973	9,682
1974	8,280
Total	41,146

The survival rate for this group of first grade students was 44.5 percent (18,301 ÷ 41,146).

The October 1983 secondary enrollment totaled 16,819 after adjustment for interdistrict transfers. (October enrollment report at 16,210 plus 612 regular and 178 city-to-county transfers minus 104 regular and 77 vocational county-to-city transfers). Note: Table II shows 688 regular city-to-county transfers; however, only 612 ($688 \times 89\%$) were from city public schools.

The twelfth grade students entered first grade in 1972, eleventh grade in 1973, tenth grade in 1974 and ninth grade in 1975. Entering first grade:

Year	Survival Rate
1972	11,351
1973	9,682
1974	8,280
1975	7,773
Total	37,086

735 *735 The survival rate for this group of first grade students was 45.4 percent ($16,819 \div 37,086$).

The October 1984 secondary enrollment totaled 15,550 after adjustment for interdistrict transfers (October enrollment report at 14,406 plus 1,249 regular and 172 vocational city-to-county transfers minus 143 regular and 134 vocational county-to-city transfers). Note: Table II shows 1,403 regular city-to-county transfers; however, only 1,249 ($1,403 \times 89\%$) were from city public schools.

The twelfth grade students entered first grade in 1973, eleventh grade in 1974, tenth grade in 1975, and ninth grade in 1976. Entering first grades:

Year	Enrollment
1973	9,682
1974	8,280
1975	7,773
1976	5,961
Total	31,696

The survival rate for this group of first grade students was 49.1 percent ($15,550 \div 31,696$).

The October 1985 secondary enrollment totaled 15,330 after adjustment for interdistrict transfers (October enrollment report at 13,628 plus 1,794 regular and 175 vocational city-to-county transfers minus 160 regular and 107 vocational county-to-city transfers). Note: Table II shows 2,016 regular city-to-county transfers; however, only 1,794 ($2,016 \times 89\%$) were from city public schools.

The twelfth grade students entered first grade in 1974, eleventh grade in 1975, tenth grade in 1976 and ninth grade in 1977. Entering first grades:

Year	Enrollment
1974	8,280
1975	7,773
1976	5,961
1977	7,427

Total	<u>29,441</u>
-------	---------------

The survival rate for this group of first grade students was 52.1 percent (15,330 ÷ 29,441).

The October 1986 secondary enrollment totaled 15,102 after adjustment for interdistrict transfers (October enrollment report at 12,361 plus 2,931 regular and 160 vocational city-to-county transfers minus 171 regular and 179 vocational county-to-city transfers). Note: Table II shows 3,293 regular city-to-county transfers; however, only 2,931 (3,292 × 89%) were from city public schools.

The twelfth grade students entered first grade in 1975, eleventh grade in 1976, tenth grade in 1977 and the ninth grade in 1978. Entering first grades:

Year	Enrollment
1975	7,773
1976	5,961
1977	7,427
1978	6,984
Total	<u>28,145</u>

The survival rate for this group of first grade students was 53.7 percent (15,102 ÷ 28,145).

High schools survival rates have steadily improved during the past five years:

Year	Survival Rate
1982	44.5%
1983	45.4
1984	49.1
1985	52.1
1986	53.7

The average annual survival rate has improved by 1.84 percent.

Procedure for determining elementary survival rates.

The October 1982 elementary (grades 1-8) enrollment totaled 36,545 as reported in the October enrollment report. This total includes special education students. No adjustments were necessary for interdistrict transfers.

The eighth grade students entered first grade in 1975, the seventh grade in 1976, sixth grade in 1977, fifth grade in 1978, fourth grade in 1979, third grade in 1980, and second grade in 1981. Entering first grades:

736 *736

Year	Enrollment
1975	7,773
1976	5,961
1977	7,427
1978	6,984
1979	7,195
1980	6,116

1981	5,775
1982	5,430
Total	<u>52,661</u>

The survival rate for this group of first grade students was 69.4 percent (36,545 + 52,661).

The October 1983 elementary (grades 1-8) enrollment totaled 37,250 after adjusting for interdistrict transfers (October enrollment report at 35,926 plus 1,571 city-to-county transfers less 247 county-to-city transfers). Note: Table II shows 1,765 regular city-to-county transfers; however, only 1,571 ($1,765 \times 89\%$) were from city public schools. This total includes special education students. Entering first grades 1976 through 1983:

Year	Enrollment
1976	5,961
1977	7,427
1978	6,984
1979	7,195
1980	6,116
1981	5,775
1982	5,430
1983	5,386
Total	<u>50,274</u>

The survival rate for this group of first grade students was 74.1 percent (37,250 + 50,274).

The October 1984 elementary (grades 1-8) enrollment totaled 36,618 after adjusting for interdistrict transfers (October enrollment report at 34,029 plus 2,928 city-to-county transfers minus 339 county-to-city transfers). Note: Table II shows 3,290 city-to-county transfers; however, only 2,928 ($3,290 \times 89\%$) were from the city public schools. This total includes special education students. Entering first grades 1977 through 1984:

Year	Enrollment
1977	7,427
1978	6,984
1979	7,195
1980	6,116
1981	5,775
1982	5,430
1983	5,386
1984	5,299
Total	<u>49,612</u>

The survival rate for this group of first grade students was 73.8 percent (36,618 + 49,612).

The October 1985 elementary (grades 1-8) enrollment totaled 36,655 after adjusting for interdistrict transfers (October enrollment report at 32,934 plus 4,102 city-to-county transfers minus 381 county-to-city transfers). Note: Table II shows 4,609 city-to-county transfer students; however, only 4,102 ($4,609 \times 89\%$) were from city public schools. This total includes special education students. Entering first grades 1978 through 1985:

Year	Enrollment
------	------------

1978	6,984
1979	7,195
1980	6,116
1981	5,775
1982	5,430
1983	5,386
1984	5,299
1985	5,436
Total	47,621

The survival rate for this group of first grade students is 77.0 percent (36,655 ÷ 47,621).

The October 1986 elementary (grades 1-8) enrollment totaled 36,410 after adjusting for interdistrict transfers (October enrollment report at 31,473 plus 5,343 city-to-county transfers minus 406 county-to-city transfers). Note: Table II shows 6,003 city-to-county transfers; however, only 5,343 (6,003 × 89%) were from city public schools. This total includes special education students. Entering first grades 1979 through 1986:

Year	Enrollment
1979	7,195
1980	6,116
1981	5,775
1982	5,430
1983	5,386
1984	5,299
1985	5,436
1986	5,315
Total	45,952

737 *737 The survival rate for this group of first grade students was 79.2 percent (36,410 ÷ 45,952).

Elementary survival rates have steadily improved during the last five years:

Year	Survival Rate
1982	69.4
1983	74.1
1984	73.8
1985	77.0
1986	79.2

The average improvement in elementary survival rates is 1.96 percent over the past five years.

Projection of Historical Data

Predicting secondary (grades 9-12) enrollment.

The survival rates observed over a five-year period show a continued improvement in student retention of 1.84 percent annually. The 1986 survival rate is increased by 1.84 percent annually for each predicted enrollment year through 1990-91. First grade students entering school in the years 1976 through 1979 will be reported in the October 1987 secondary enrollment.

Predicted October 1987 Enrollment

Year	Grade	Enrollment
1976	1	5,961
1977	1	7,427
1978	1	6,984
1979	1	7,195
		27,567
		.5554 (1986 survival rate 53.7% + 1.84%)
1987		15,311 Predicted 9-12 enrollment

Predicted October 1988 Enrollment

Year	Grade	Enrollment
1977	1	7,427
1978	1	6,984
1979	1	7,195
1980	1	6,116
		27,722
		.5738 (1987 survival rate 55.54% + 1.84%)
1988		15,907 Predicted 9-12 enrollment

Predicted October 1989 Enrollment

Year	Grade	Enrollment
1978	1	6,984
1979	1	7,195
1980	1	6,116
1981	1	5,775
		26,070
		.5922 (1986 survival rate 57.38% + 1.84%)
1989		15,349 Predicted 9-12 enrollment

Predicted October 1990 Enrollment

Year	Grade	Enrollment
1979	1	7,195
1980	1	6,116
1981	1	5,775
1982	1	5,430
		24,516
		.6106 (1986 survival rate 59.22% + 1.84%)
1990		14,969 Predicted 9-12 enrollment

738 *738 **Predicting elementary (grades 1-8) enrollment**

The survival rates observed over a five-year period show a continued improvement in student retention. The 1986 survival rate is increased by 1.96 percent annually for each predicted enrollment year through 1990-91. First grade enrollments through 1986 are actual, and enrollments for 1987 through 1990 are estimated. Estimated first grade enrollments of 5,376 are based upon the average first grade class size over the past five years, adjusted for interdistrict transfers. Table V shows first grade classes remaining quite stable from 1982 through 1986. The variance from the average is 77 or fewer students each year.

First grade students entering school in the years 1980 through 1987 will be reported in the October 1987 elementary enrollment (grades 1-8).

Predicted October 1987 Enrollment

Year	Grade	Enrollment
1980	1	6,116
1981	1	5,775
1982	1	5,430
1983	1	5,386
1984	1	5,299
1985	1	5,436
1986	1	5,315
1987	1	5,376 ^[*]
		44,133
		.8116 (1986 survival rate 79.2% + 1.96%)
1987		35,818 Predicted 1-8 enrollment

Predicted October 1988 Enrollment

Year	Grade	Enrollment
1981	1	5,775
1982	1	5,430
1983	1	5,386
1984	1	5,299
1985	1	5,436
1986	1	5,315
1987	1	5,376
1988	1	5,376 ^[*]
		43,393
		.8312 (1987 survival rate 81.16% + 1.96%)
1988		36,068 Predicted 1-8 enrollment

Predicted October 1989 Enrollment

Year	Grade	Enrollment
1982	1	5,430
1983	1	5,386
1984	1	5,299
1985	1	5,436
1986	1	5,315
1987	1	5,376
1988	1	5,376
1989	1	5,376 ^[*]
		42,994
		.8508 (1988 survival rate 81.16% + 1.96%)
1988		36,579 Predicted 1-8 enrollment

739 *739

Predicted October 1990 Enrollment

Year	Grade	Enrollment
1983	1	5,386
1984	1	5,299
1985	1	5,436
1986	1	5,315
1987	1	5,376
1988	1	5,376
1989	1	5,376
1990	1	5,376 ^[*]
		42,940
		.8704 (1989 survival rate 85.08% + 1.96%)
1988		37,375 Predicted 1-8 enrollment

Distribution of students. Interdistrict transfer students were returned to city schools in predicting enrollment. If the goal of 15,000 transfer students is reached by 1990-91, the predicted school enrollment must be adjusted. VICC sending school analysis for 1985-86 reveals that 11 percent of interdistrict transfer students are from private and parochial schools. Eighty-nine percent (89%) of the 15,000 city-to-county transfer students will come from city public schools. VICC data showed that the interdistrict transfer students were distributed: 39 percent elementary; 27 percent middle school; and 34 percent high school. The distribution of city-to county transfer students is calculated as follows:

15,000 City-to-county transfers permitted
89% From city schools

13,350 Transfers from city schools
5,270 Elementary (39%)
3,605 Middle school (27%)
4,538 High school (34%)

13,350 Total

The Board predicts magnet enrollment at 12,876, L(852)86, for the 1990-91 school year. The predicted distribution:

	Level	City	County	Total
	High School	4,530	484	5,014
F S	Middle and Elementary	7,103	759	7,862
	Total	11,633	1,243	12,876

The vocational enrollment is assumed to remain at 600. Any increases in vocational enrollment would result in a reduction in regular enrollment. An increase in vocational enrollment would not pose a housing problem.

Kindergarten enrollment has stabilized during the past three years and the 1990-91 class is predicted to be 4,500, after adjustment for interdistrict transfers.

The following table shows the distribution of the projected 1990-91 enrollment, by level, in regular integrated and nonintegrated schools.

740 *740

Table VII
Predicted Regular Enrollment by Level
October 1990

Total students in grades 9-12		14,969	
Less:			
City to county transfers	4,538		
High school magnets	4,530		
Vocational	600		9,668
Regular 9-12 Enrollment			5,301
Total students in grades 1-8	37,375		
Kindergarten	4,500	41,875	
Less:			
City to county transfers	8,812		
Elementary/Middle school magnets	7,103		15,915
Regular K-8 enrollment			25,960
Resident enrollment		56,844	
Regular K-12 enrollment			31,261

During the 1990-91 school year, facilities must be provided to house 31,261 regular students (5,301 + 25,960).

In addition to the capacity needed for regular schools, space must be provided for 12,876 magnet school students from city and county (4,530 grades 9-12 city; 7,103 grades K-8 city; and 1,243 grades K-12 county). Seats are available for more than the 600 vocational students from city and county students estimated herein for housing at O'Fallon High School.

The October 1986 enrollment report shows 47.8 percent of regular high school students, 38.9 percent of regular middle school students and 35.3 percent of regular elementary students attend integrated schools. Middle

schools account for 25.3 percent of the total K-8 enrollment. Using these percentages and the same proportion of students in special education, the predicted 1990-91 enrollment is shown in the following table:

Table VIII Distribution of Projected 1990-91 Enrollment			
Level	Integrated	Nonintegrated	Total
Regular High School	2,533	2,768	5,301
Regular Middle School	2,309	3,628	5,937
Middle Special Education	245	385	630
Regular Elementary	6,393	11,720	18,113
Elementary Special Education	452	828	1,280
All Magnets	12,876		12,876
Vocational	600		600
Totals	25,408	19,329	44,737

ATTACHMENT 2

Accommodating 12(c) Programs

741 A comparison of the Board's capacity data with current enrollments shows that there is currently a surplus of instructional space in high schools. The October 1986 enrollment is 8,782 in eight regular high schools. A current capacity surplus of 4,526 is identified when 1986-87 enrollment is subtracted from the Board's estimated *741 capacity of 13,308 for these schools ($13,308 - 8,782 = 4,526$).

This surplus capacity is likely to increase according to enrollment estimates herein for 1990-91. It is expected that high school enrollment will continue to decline as smaller classes enter high school from lower grades, Settlement Plan magnets are expanded to meet the court-approved goal of 6,000 in grades K-12, and the Settlement Plan target of 15,000 inter-district transfers in grades K-12 is reached. Assuming a 1990-91 enrollment of 5,301 in grades 9-12, there will be a surplus capacity in regular high schools of 8,007, exclusive of unused space at O'Fallon High School, as shown below:

Projected High School Capacity, 1990-91				
	Capacity	Projected Enrollment	Surplus Capacity	Classroom Equivalent
Integrated	6,274	2,533	3,741	133
Nonintegrated	7,034	2,768	4,266	152
Total	13,308	5,301	8,007	285

These projections prompt the following observations:

1. O'Fallon has substantial unused capacity to provide for future enrollments. If vocational enrollments increase, more spaces will be freed up in regular high schools.
2. It appears that three or four regular high school buildings may be available in 1990 for other purposes, such as middle schools, magnet schools or offices.

3. The substantial surplus of high school space should reduce the need for reconfiguration of high school facilities since whole classrooms can be used in place of smaller rooms for such functions as special education, counseling and administration.

Middle school capacity. The Board currently operates 24 middle schools (two with contiguous branches) with a reported capacity of 10,317. Ten integrated middle schools have a reported capacity of 3,787 and 14 nonintegrated schools have a reported capacity of 6,621, L(852)86, page 45. (There is an addition error in the present capacity column on the Board's filing. The correct total should read 10,408). Capacities reported in Plan 680 are based on a class size of 26 and the Winsor model school prototype.

Since the middle school capacities shown in filings of the Board and State are not adjusted to meet class sizes of 20 mandated by the Court for nonintegrated middle schools, a new analysis is required. The procedure used began with the identification of the total number of rooms available for instructional use in each middle school currently in operation. The count was derived from building floor plans filed by the Board and verified by on-site inspections of facilities to determine current building use. Deductions were made from total instructional rooms in each school to provide facilities other than classrooms, required for 12(c) programs and AAA classification standards.

The following factors impact significantly upon building capacities: DESE requirements for AAA classification; court-approved 12(c) programs; special education; P/T ratios, and the scheduling of classes.

The following AAA requirements affect scheduling and building capacities in both integrated and nonintegrated schools:

1. Art  Available to all students for at least two periods per week;
2. Music  Available to all students for at least two periods per week;
3. Physical education shall be taught to all students for at least two periods per week.
- 742 4. Home economics and industrial arts shall be available to all students in grades *742 7, 8 and 9 for at least two periods per week.
5. Language arts, social studies, science and math shall be taught to all students a minimum of 800 minutes per week with a minimum of 150 minutes per week to be spent teaching each of these four areas.
6. A media center (library) shall be established in each school.
7. All teachers shall have planning time scheduled within the school day and shall devote no more than an average of 310 minutes of the six-hour day to teaching and study halls, except that full-time librarians and guidance counselors may devote 360 minutes of the six-hour day to these duties.

Settlement Plan 12(c) programs also requiring space allocation in nonintegrated schools are enrichment, schools of emphasis and computer labs.

The model employed in determining middle school building capacity herein is a schedule of classes using a seven-period, six-hour day (360 minutes of supervised instruction) with 15 sections (three grades each with five classes). The following schedule satisfies AAA requirements for art, music, physical education, home economics and industrial arts and teacher preparation time: 15 sections × 7 periods/day × 5 days/week = 525 sections/periods of supervised instruction required per week.

Periods	Sections/ per Week
1 art teacher × 6 periods (310 minutes) × 5 days	30

1 music teacher × 6 periods (310 minutes) × 5 days	30
1 physical education teacher × 6 periods (310 minutes) × 5 days	30
1 home economics teacher × 6 periods (310 minutes) × 5 days	30
1 industrial arts teacher × 6 periods (310 minutes) × 5 days	30
12.5 language arts, social studies, science, math and electives × 6 periods × 5 days	375
Total	525

In this model the full-time art, music and physical education teachers satisfy the AAA requirements in these areas and also provide the required teacher preparation time (90 periods provided and 72.5 required). It is not necessary to schedule home economics and industrial arts teachers to provide teacher preparation time. These teachers are scheduled in the same manner as all other regular teachers. This procedure meets AAA time requirements and adds to building capacity. Twelve and one-half teachers are scheduled for language arts, social studies, science, math and electives. While only 240 periods per week are required for language arts, social studies, science and math, 375 periods are available. This leaves 135 periods to be scheduled at the option of the local district. In this model, 14.5 FTEs (12.5 regular FTEs plus home economics and industrial arts) are assigned to teaching stations and contribute to building capacity. Art, music and physical education classes plus enrichment, schools of emphasis and computer labs require teaching stations but do not add to capacity. Art, music and physical education rooms could be used by a second teacher during preparation time (one period per day per teacher). Therefore, it is not necessary to add a second art or music room until the school exceeds 18 sections.

743 *743

Rooms Provided	Buildings up to 18 sections		Buildings over 18 sections	
	Integrated	Non-Integrated	Integrated	Non-Integrated
Library	1.0	1.0	1.0	1.0
Art	1.0	1.0	2.0	2.0
Music	1.0	1.0	2.0	2.0
Home Econ.	1.0	1.0	1.0	1.0
Ind. Arts	1.0	1.0	1.0	1.0
Enrich. Lab	0.0	1.0	0.0	1.0
School of Emphasis	0.0	1.0	0.0	1.0
Computer Lab	0.0	1.0	0.0	1.0
Phy. Ed. Facility	1.0	1.0	1.0	1.0
Spec. Ed.	6.8	5.7	6.8	5.7

An analysis of middle school floor plans and on-site building inspections reveals a need to reallocate some classroom facilities for special purposes. The room allocation charts show net available classrooms after classroom space is allocated for libraries, art, music and special education in all schools and for enrichment, schools of emphasis and computer labs in the nonintegrated schools.

The net classroom count in the 24 middle schools currently operated by the Board after allowing non-classroom instructional spaces as indicated in the room allocation charts is summarized below.

Middle School Classrooms Needed and Available

	Projected 1990 Enrollmt.	P/T Ration	Classrooms Needed	Classrooms Available	Excess (Deficit)
--	--------------------------------	---------------	----------------------	-------------------------	---------------------

Integrated Schools (10)

Regular	2,309	26/1	89	175 ^[*]	86
Special Ed.	245	10/1	25	58	33

Nonintegrated Schools (14)

Regular	3,628	20/1	182	281 ^[**]	99
Special Ed.	385	10/1	39	80	41

An excess of 86 regular classrooms in the integrated middle schools will remain in 1990 after space is provided to meet AAA requirements and special education needs. At a P/T ratio of 26/1, the excess capacity would accommodate 2,236 students. After special education requirements are met, 33 small rooms are available for Chapter 1 reading and math pullout programs.

An excess of 99 classrooms in nonintegrated middle schools will remain in 1990 after space is provided to meet AAA requirements, special education needs and rooms for enrichment, schools of emphasis and computer labs. At P/T ratio of 20/1, the excess capacity would accommodate 1,980 students. After special education requirements are met, 41 small classrooms are available for Chapter 1 reading and math pullout programs.

744 The room allocation charts show that 20 regular classrooms in integrated schools and 17 regular classrooms in nonintegrated schools have been allocated to special education. *744 Since special education classes are limited to 10 students, these regular classrooms can be divided to provide 40 classrooms in integrated schools and 34 classrooms in nonintegrated schools. When added to existing small rooms, they would provide a total of 58 special education rooms in integrated schools and 80 special education rooms in nonintegrated schools.

Room Allocation Chart

Integrated Middle Schools

School	Regular	Home	Industrial	Special Education						
	Classrooms	Economics	Arts	Reg. Rms.	Sm. Rms.	Library	Art	Music	Offic	
Blow	16	1	1	2	1	1	1	1	0	
Clinton	16	1	1	2	2	1	1	1	0	
Dewey	13	1	1	3	0	1	1	1	0	
Fanning	17	1	1	3	0	1	1	1	0	
Grant	11	1	1	2	2	1	1	1	0	
Long	17	1	1	3	0	1	1	1	1	
L'Ouverture	22	1	1	3	0	1	2	1	0	
Mullanphy	19	1	1	0	8	1	2	1	0	
Nottingham	8	1	1	1	0	1	1	0	0	
Webster	16	1	1	1	5	1	1	1	0	
Totals	155 ^[*]	10 ^[*]	10 ^[*]	20 ^[**]	18	10	12	9	1	

Nonintegrated Middle Schools

School	Regular	Home	Industrial	Special Education		Enrichment		Emphasis	Art
	Classrooms	Economics	Arts	Reg. Rms.	Sm. Rms.	Library	Lab	Lab	
Simmons	23	1	1	1	5	1	1	1	2
Stevens	18	1	1	0	5	1	1	1	2
Stowe	20	1	1	2	2	1	1	1	2
Turner	19	1	1	1	3	1	1	1	2
Washington	12	1	1	1	3	1	1	1	1
Yeatman	19	1	1	2	2	1	1	1	2
Blewett	21	1	1	2	2	1	1	1	2
Columbia	17	1	1	1	3	1	1	1	1
Cook	15	1	1	1	4	1	1	1	1
Ford	24	1	1	1	5	1	1	1	1
Hickey	12	1	1	3	0	1	1	1	1
King	16	1	1	0	5	1	1	1	1
Langston	21	2	2	1	3	1	1	1	2
Williams	16	1	1	1	4	1	1	1	1
Totals	253 ^[*]	15 ^[*]	15 ^[*]	17 ^[**]	—	—	—	—	—
46	14	14	14	21	16	14			

The net result of this analysis indicates that enrollment in some middle schools may be consolidated by 1990-91, releasing currently operated middle schools for other uses, such as nonintegrated elementary schools or elementary or middle magnet schools. If high schools are released as regular middle schools, as suggested in the previous section, the surplus capacity available for elementary schools or for new magnets would increase further.

Elementary school capacity. The Board currently operates 63 regular elementary schools: 20 integrated schools with a reported capacity of 7,925 and 43 nonintegrated schools with a reported capacity of 15,774, as shown in L (852)86, pages 61-62. Since the Board's capacity data is based upon current pupil/teacher ratios and the Winsor model school prototype, it is necessary to recalculate capacities to comply with court orders, including ⁷⁴⁵ the required P/T ratio of 20/1 in nonintegrated schools.

In this analysis, elementary school capacities were derived by counting the number of full-size and small rooms in each of the 63 elementary schools currently operated by the Board. From these totals were deducted sufficient rooms to meet 12(c) program and AAA accreditation standards. The rooms remaining in each school were assigned as classrooms at P/T ratios of 20/1 in nonintegrated schools and 26/1 in integrated schools. These ratios meet or exceed court requirements and AAA standards. The net capacity in terms of classrooms and students was compared with projected 1990-91 enrollment in regular elementary grades, K-5.

There are temporary, "portable," nonmasonry buildings on some elementary sites. They were placed on playground space to accommodate the enrollment explosion of the decade of the 1960s. None of these "portables" has been counted in this capacity analysis.

Impacting significantly upon building capacities are:

(1) DESE requirements for AAA classification; (2) special education needs; (3) required P/T ratios; and (4) 12(c) requirements for enrichment labs and schools of emphasis in nonintegrated schools. Office space also has some impact on building capacity.

AAA requirements impacting on building capacity in both integrated and nonintegrated schools are the following:

1. Physical education ☐ two 30-minute periods per week;
2. Art ☐ 60 minutes per week;
3. Music ☐ 60 minutes per week;
4. Library ☐ facilities required in each school;
5. Teacher preparation time ☐ all teachers shall have planning time scheduled within the school day; they shall devote no more than an average of 310 minutes of the six-hour day to teaching, except that full-time librarians and guidance counselors may devote 360 minutes of the six-hour school day to these duties.

Properly scheduling staff to meet AAA requirements for art, music and physical education will also meet AAA requirements for teacher preparation time.

A school model with three classes at each grade level (K-5) will have 18 sections. Three FTEs are necessary to provide the necessary teacher preparation time; 18 classes at 360 minutes per day = 6,480 section minutes required.

18 classroom teachers at 310 minutes	= 5,580 minutes for
per day	regular staff
1 art teacher at 310 minutes per	= 310 minutes
day	
1 music teacher at 310 minutes per	= 310 minutes
day	
1 physical education teacher at 310	= 310 minutes
minutes per day	
Total	= 6,510 minutes

While only 54 hours per week are required for art, music and physical education (art 18 hours, music 18 hours and physical education 18 hours), 75 hours per week are established in this schedule. This exceeds AAA requirements by 21 hours per week, which may be used for teaching other subjects. However, the 75 hours per week are necessary to meet the AAA requirement for teacher preparation time.

Classrooms needed to meet all court and AAA requirements are shown below. Note that schools with more than 18 sections of regular classes need additional art and music classes.

746 *746

Rooms Provided	Buildings up to 18 sections		Buildings over 18 sections	
	Non-Integrated	Integrated	Integrated	Non-Integrated
Library	1.0	1.0	1.0	1.0
Art	1.0	1.0	2.0	2.0
Music	1.0	1.0	2.0	2.0
Enrichment Lab	0.0	1.0	0.0	1.0
School of Emphasis	0.0	1.0	0.0	1.0
Phy. Ed. Facility	1.0	1.0	1.0	1.0
Spec. Ed. and Chapter 1 ☐				
Half Rooms (aver.)	6.1	5.9	6.1	5.9

An analysis of elementary school floor plans, verified by on-site building inspections, reveals a need to reallocate some classroom facilities for special purposes. The room allocation charts are based on the Board's current use of 63 elementary schools. They identify remaining available classrooms after space is allocated for libraries, art,

music and special education for all schools. Additional rooms in non-integrated schools are allocated for enrichment labs and schools of emphasis. Also, some classrooms are allocated for general upgrading of office space.

In order to determine needed capacity for 1990-91, it is necessary to compare room allocations for 63 elementary schools currently in operation with projected 1990-91 enrollments. This process identifies future surplus classroom capacity in nonintegrated and integrated schools. The classroom requirement chart below compares classrooms needed to house projected 1990-91 enrollment with available classroom capacity in the Board's 63 operating elementary schools. The available classroom capacity remains after all required rooms are set aside, as noted in the room allocation charts.

Room Allocation Chart

Integrated Elementary Schools

School	Library	Art	Music	Enrichment Lab	Emphasis Lab	General Offices	Special Reg. Rms.	Education Sm. Rms.
Adams	1	1	1	0	0	0	3	0
Buder	1	1	0	0	0	1	3	1
Clay	1	1	1	0	0	0	3	0
Froebel	1	1	1	0	0	1	3	1
Garfield	1	1	1	0	0	0	3	0
Hamilton	1	1	1	0	0	0	2	2
Henry	1	1	1	0	0	1	2	2
Hodgen	1	1	1	0	0	0	3	0
Lafayette	1	1	1	0	0	1	3	0
Mann	1	1	1	0	0	0	3	1
Meramec	1	1	1	0	0	1	2	1
Oak Hill	1	1	1	0	0	1	3	0
Roe	1	1	1	0	0	0	3	1
Scruggs	1	1	1	0	0	0	3	0
Shenandoah	1	1	1	0	0	0	2	1
Shepard	1	1	1	0	0	1	3	0
Sherman	1	1	1	0	0	0	3	0
Sigel	1	1	1	0	0	0	1	4
Woodward	1	1	1	0	0	0	3	0
Wyman	1	1	1	0	0	0	1	5
	--	--	--	-	-	-	--	--
Totals	20	20	19	0	0	7	52 ^[*]	
19	321							

747 *747

Room Allocation Chart

Nonintegrated Elementary Schools

School	Library	Art	Music	Enrichment Lab	Emphasis Lab	General Offices	Special Reg. Rms.	Education Sm. Rms.
Arlington	1	1	1	1	1	0	1	4
Ashland/								

Branch	1	1	1	1	1	0	2	2	36
Baden		1	1	0	1	1	0	2	1
Banneker		1	1	1	1	1	0	2	2
Bryan Hill		1	1	1	1	1	0	2	3
Carr Lane		1	1	1	1	1	0	3	0
Carver-Addition	0	0	0	0	0	0	0	5	
Clark		1	1	0	1	1	1	2	2
Cole		1	1	1	1	1	1	2	2
Cook Branch		0	0	0	0	0	0	0	2
Cote Brilliante		1	1	1	1	1	1	3	0
Cupples		1	1	1	1	1	0	3	0
Dunbar		1	1	1	1	1	0	0	6
Dunbar Branch		0	0	0	0	0	0	0	0
Eliot		1	1	1	1	1	0	2	2
Emerson		1	1	1	1	1	0	3	0
Farragut		1	1	1	1	1	0	1	2
Farragut Branch 1		0	0	0	0	0	0	0	0
Farragut Branch 2		0	0	0	0	0	0	0	0
Field		1	1	1	1	1	0	2	2
Gundlach		1	1	1	1	1	0	1	4
Hamilton Branch 1		0	0	0	0	0	0	0	0
Hamilton Branch 2		0	0	0	0	0	0	0	0
Harrison		1	1	0	1	1	0	2	2
Hempstead		1	1	1	1	1	0	3	0
Hempstead Branch 1		0	0	0	0	0	0	0	0
Herzog		1	1	1	1	1	0	0	0
Irving		1	1	1	1	1	0	3	0
Jackson		1	1	1	1	1	0	1	4
Jefferson		1	1	1	1	1	0	2	2
Laclede		1	1	1	1	1	0	1	4
Lexington		1	1	1	1	1	0	0	0
Lowell		1	1	1	1	1	0	2	0
Mark Twain		1	1	1	1	1	0	2	2
Marshall/Branch ^[*]									
1	1	1	1	0	2	2	23		
Mitchell		1	1	1	1	1	0	0	6
Mitchell Branch		0	0	0	0	0	0	0	0
Peabody		1	1	1	1	1	0	1	4
Scullin		1	1	1	1	1	0	2	1
Walbridge		1	1	1	1	1	0	1	4
Walnut Park		1	1	1	1	1	1	3	0
Williams Branch 1		0	0	0	0	0	0	0	0
	--	--	--	--	--	--	-	--	--
Totals		32	32	29	32	32	4	56 ^[**]	
70	639								

Elementary School Classrooms Needed and Available

Projected					
1990	P/T	Classrooms	Classrooms	Excess	
Enrollmt.	Ratio	Needed	Available	(Deficit)	

Integrated Schools

Regular	6,393	26/1	246	321	75
Special Ed.	452	10/1	46	123	77

Nonintegrated Schools

Regular	11,720	20/1	586	639	53
Special Ed.	828	10/1	83	182	99

748 *748 An excess of 75 regular classrooms will remain in 1990 in integrated elementary schools after rooms are set aside for AAA and special education requirements. At a P/T ratio of 26/1, the excess capacity would accommodate 1,950 students. After special education requirements are met, 77 small rooms are available for Chapter 1 reading and math pullout programs.

An excess of 53 regular classrooms will remain in 1990 in nonintegrated elementary schools after rooms are set aside to provide for AAA requirements, special education needs, enrichment labs and schools of emphasis. At a P/T ratio of 20/1, the excess capacity would accommodate 1,060 students. After special education requirements are met, 99 small rooms are available for Chapter 1 reading and math pullout programs.

The room allocation charts show that 52 regular classrooms in integrated schools and 56 regular classrooms in nonintegrated schools have been allocated to special education. Since special education classes are limited to 10 students, these regular classrooms can be divided to provide 104 classrooms in the integrated schools and 112 classrooms in the nonintegrated schools. When added to existing small rooms, they would provide a total of 123 special education rooms in the integrated schools and 182 rooms in the nonintegrated schools. Since full-time special education students are mainstreamed in art, music and physical education, they do not impact on the regular 20/1 P/T ratios.

ATTACHMENT 3

Consolidation of Facilities

Additional Instruction Rooms Provided by Adding New Gymnasiums

Nonintegrated Schools

School	Present Playroom Facilities		Renovated Classrooms	Small Rooms
	No.	Sq. Feet		
Ashland	2	2,448	2	
Baden	2	4,308	4	
Bryan Hill	1	1,656	2	
Clark	1	2,016	2	
Cote Brilliante	2	4,280	2	2
Cupples	1	2,736	2	
Dunbar	2	5,112	4	
Eliot	1	1,375	1	1
Emerson	1	1,904	1	1
Farragut	2	3,848	2	2
Gundlach	1	2,520	2	
Hempstead	2	3,640	4	
Herzog	1	2,072	2	
Laclede	1	2,318	2	

Lexington	0	0	0	
Lowell	1	1,704	2	
Mark Twain	1	2,304	1	1
Scullin	1	1,200	1	1
Walnut Park	1	960	1	
--	--	--	--	--
Total	24		37	8

749 *749

Integrated Schools

School	Present Playroom Facilities		Renovated Classrooms	Small Rooms
	No.	Sq. Feet		
Froebel	1	1,512	0	0
Sherman	1	1,598	1	1
Wyman	2	3,952	1	1
Clay	1	1,775	2	0
Shepard	1	1,775	2	0
Henry	1	1,750	2	0
Lafayette	1	2,280	1	1
Oak Hill	1	1,752	2	0
Meramec	1	2,272	1	1
Mann	2	3,787	2	0
Scruggs	1	3,232	2	1
Hamilton	1	2,304	1	1
Roe	1	1,664	1	0
Buder	2	7,560	2	1
Woodward	2	5,568	3	2
Shenandoah	1	1,360	1	0
Garfield	1	1,920	0	0
	21		24	9

Intracity Magnets

School	Present Playroom Facilities		Renovated Classrooms	Small Rooms
	No.	Sq. Feet		
Madison	1	3,168	2	2
Mallinckrodt	1	2,176	0	0
Shaw	1	1,904	1	1
Stix	1	2,516	1	0
Wade	1	2,184	2	1
Waring	0	0	0	0
Wilkinson	1	1,147	1	0
	6		7	4

ATTACHMENT 4

Excerpts from Zurheide-Herrmann Cost Proposals

The Board's Desegregation Related Analysis of Facility Evaluation Surveys, Volume 5, Book A through P, dated April 19, 1986, contains work items and their associated costs. Each school is listed separately, and the work items are identified as necessary to meet: (1) city codes; (2) 12(c) Settlement Plan requirements, including reconfigurations; (3) reconfigurations to meet requirements of magnet school programs; (4) building additions to provide for 12(c) programs for each school's designated enrollment model; and (5) building additions to meet program requirements of magnet schools. The analysis was prepared by Zurheide-Herrmann, Inc., Engineers-Architects (ZH). The ZH firm itself surveyed 10 high schools. It also coordinated the work of 13 additional architectural/engineering (A/E) firms who surveyed the remaining schools.

750 *750 **Inconsistencies in Reporting Format**

The reporting format used by the ZH firm in estimating project costs for 10 high schools differed from that used by the 13 other A/E firms: (1) The ZH report included roofs as part of the building envelope while the other firms reported roofs separately; (2) the ZH firm reported two categories (heating and plumbing) under "mechanical" while the other 13 A/E firms reported mechanical as a single category; (3) the ZH firm reported fire protection as a separate category while the other Z/E firms included fire protection in the health, safety and handicapped category; (4) the ZH firm listed work projects within each of its own set of major categories. However, cost data were not reported for each separate work project; only a total cost for each major category was shown. The remaining A/E firms reported individual work projects within each major category, using a uniform classification system. Cost data for each work project were shown, along with a total cost for the major category.

The following examples show the different reporting formats:

Major Category Electrical

Zurheide-Herrmann

Beaumont High School

Description	Quantity	Unit	Total
New fire alarm	1	Lot	-
Receptacle	1	Lot	-
Electrical service	1	Lot	-
Cable tray	1	Lot	-
Emergency lighting	1	Lot	-
New classroom lights	2,307	Each	-
Corridor lights	639	Each	-
Antivandal lights	1	Lot	-
Upgrade power	1	Lot	-
Total			\$803,283

All other firms used a more detailed reporting format, as shown in the following example of Ford Middle School:

Description	Quantity	Unit	\$/Unit	Total
New lights	13,666	S.F.	\$ 3.38	\$ 46,191
New outlets	193	Each	81.00	15,633

Floor power bus	30	L.F.	20.00	600
New cable tray	1	L.S.	9,800.00	9,800
Repl. fire alarm	1	L.S.	33,000.00	33,000
Repl. security and Instrusion alarm	1	L.S.	17,000.00	17,000
Total				\$122,224

The ZH reporting format for 10 high schools does not permit analysis of individual work projects. Nor can ZH work project costs be compared with those of other A/E firms who reported on most schools. This condition prohibits a comparative analysis of individual work projects in all schools. However, work projects may be compared among all of the remaining schools surveyed by the other 13 A/E firms coordinated by the ZH firm.

Inconsistent Cost Estimates for Similar Projects

The discretion left to the individual A/E firms resulted in substantially different cost estimates for similar work projects. Parameters for determining repair, replacement or new installation seem to be lacking. Full implementation of all work projects in the ZH report would leave buildings in substantially differing states of repair.

Variant costs for schools of the same age. In analyzing these estimated costs, significant differences in rehabilitation costs were observed. One would expect that buildings constructed at different time periods would require differing kinds and amounts of rehabilitation work. However, substantial cost differences were observed for buildings constructed during the same year under the same building code. Tables I and II illustrate these differences. Table I shows two elementary schools, Henry and Farragut, constructed in 1906 and three elementary schools, Cote Brilliante, Hempstead and Shepard, constructed in 1909. Table II shows three middle schools, Cook, Ford and Stevens, all constructed in 1964.

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TABLE I

Comparative Costs, Selected Elementary Schools

Item	Schools Constructed 1906		Schools Constructed 1905		
	Henry	Farragut	Cote Brilliante	Hempstead	Shepa
Site Work					
Concrete walks, steps	\$ 9,897	\$ 2,835	\$ 4,185	\$ 6,144	\$24,4
Asphalt, seal, curbs	17,040	7,266	2,454	17,396	23,2
Retaining walls	0	10,796	1,206	729	
Fence, rails, paint/ repl.	5,427 1,600	11,175	3,898	7,645	
New parking	0	27,500	0	63,750	12,5
Security lights	0	20,000	0	20,000	20,0
Seed/ sod	0	1,000	2,860	0	625
Building exterior					
Tuckpoint	10,569	21,232	155,118	166,118	18,8
Reset walls	0	0	2,750	0	
Exterior doors/ hardware	8,625 8,126	9,875	4,688	5,625	

Paint/ caulk		26,674	21,420	31,130	29,096	21,420
Repl. window lights		44,561	6,995	32,046	0	72,8
Repl. noninsulated glass		0	7,448	0	12,038	
Window guards/ mesh	430	645	7,740	0	3,200	
Roofs						
Remove built- up roof	525	2,497	1,890	19,043	1,903	
New roof		82,047	54,949	10,320	0	10,4
Remove gravel		0	1,998	0	0	
New deck		0	0	0	0	10,1
Flashing, joists, timber		1,419	816	22,374	2,808	14,3
Caulk/ tuck parapet		538	4,489	5,146	2,405	0
Gutters/ downspouts		312	0	19,191	12,498	0
Building interior						
Paint/ plaster		13,306	38,257	46,066	55,778	49,631
Refinish hardwood floors		47,845	14,662	43,299	54,717	38,8
New resilient floor		0	499	0	6,973	52,1
Repr./ repl. resilient floor		3,672	5,315	5,897	32,836	0
Concrete floor		0	6,878	25,934	34,574	
New acoustical board/ tile	58,156	37,002	0	20,491	57,066	
Repl. acoustical board/ tile	0	0	46,558	36,049	0	
Toilet partitions		3,000	0	6,000	10,400	
Paint casework/ trim	12,861	0	0	421	39,792	
Refinish casework/ trim	0	20,529	96,270	38,136	0	
Mechanical						
New boiler/ furnace		0	0	37,000	0	0
Repair boiler			0	6,000	0	0
Auto outside dampers			0	23,800	0	0
Controls repr./ repl.	0	0	0	67,500	0	
Repl. radiators		600	600	0	1,800	3
New return air system		80,000	8,500	101,500	0	
New air filters		0	5,000	5,000	5,000	
System pumps		0	0	5,000	0	3,5
Toilet/ pipes		0	0	3,918	37,425	0
Unit ventilators			0	1,225	1,531	2

Comparative Costs, Selected Elementary Schools

Item	Schools Constructed 1906		Schools Constructed 1905		
	Henry	Farragut	Cote Brilliante	Hempstead	Shepa
Electrical					
Lights	156,311	110,222	134,588	175,361	151,5
Outlets	18,792	8,586	10,935	8,100	18,0
Fire alarm	20,000	4,686	20,000	28,500	
Security/ intrusion	20,000	8,821	12,000	15,500	0
Panels and additional service	293,000	38,311	73,000	52,000	13,9
Cable tray	0	7,021	4,000	4,000	
Health, safety, handicap					
Labeled doors/ hardware	81,750	39,000	37,500	50,250	60,750
Egress hardware		1,000	0	0	2,500
Door magnetic hold open		12,765	5,980	5,750	8,280
1 hr. trnsn/ sidelight	4,625	3,875	3,375	4,125	10,250
Exterior door security		5,820	4,850	6,305	7,760
Stairwell enclosure		45,000	30,000	30,000	30,000
Exit lights		0	0	1,720	1,290
Emergency lights		3,626	3,108	7,770	5,180
Stand pipes		17,994	13,770	20,250	18,225
Handicap restrooms		0	4,800	4,800	4,800
Handicap access		0	5,000	5,000	5,000
Wheelchair lifts		0	0	0	9,5
Sprinkler system		0	15,750	5,250	0
Energy conservation		7,525	24,815	24,560	198,815
12					
(c) reconfiguration		133,291	235,710	395,672	114,495
					41,350

TABLE II

Comparative Costs, Selected Middle Schools

Item	Schools Constructed 1964		
	Cook	Ford	Stevens
Site work			
Concrete steps, walks, etc.	\$ 1,505	\$ 0	\$ 6,484
Asphalt, seal, curbs	8,490	320	6,400
Retaining walls	5,594	0	0
Fence, rails, etc.	3,432	156	0
New parking	0	0	62,500

Security lights	0	0	20,000
Sod/seed	39,000	19	2,420
Building exterior			
Tuckpoint	12,377	9,070	7,896
Exterior doors/hardware	6,500	7,219	8,250
Paint/caulk	30	11,210	8,790
Replace window lights lights	23,046	13,288	10,364
Replace noninsulated glass	3,780	4,725	0
Window guards/mesh	0	17,900	0
Roofs			
Remove built-up roof	0	30,656	0
New roof	70,929	168,609	0
Remove gravel	0	24,525	0
Building interior			
Paint/plaster	14,021	14,098	52,440
New resilient floor	0	0	42,920
Replace resilient floor	13,914	11,842	32,894
New acoustical board/tile	0	0	51,163

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TABLE II Continued

Comparative Costs, Selected Middle Schools Continued

Item	Schools Constructed 1964		
	Cook	Ford	Stevens
Replace acoustical board/tile	12,348	0	8,866
Toilet partitions	12,360	8,040	1,500
Paint casework/trim	13,331	9,747	15,281
Refinish casework	3,900	0	0
Mechanical			
New air filters	275	700	0
Replace/repair pumps	0	0	1,000
Toilets/lavatories/pipes	150	6,232	4,925
Unit ventilators	0	0	5,513
Other	2,100	0	5,000
Electrical			
Lights	43,781	46,191	131,857
Outlets	8,748	15,633	12,474
Fire alarm	1,000	33,000	7,000
Security/intrusion	0	17,000	1,500
Panels/additional service	4,500	0	14,500

Cable tray	0	9,800	0
Health, safety, handicap			
Labeled doors/hardware	21,000	39,000	10,670
Egress hardware	37,500	0	0
Door magnetic hold open	11,845	4,140	0
Exterior door security	3,880	0	0
Stairwell enclosures	50,000	0	0
Exit lights	0	0	860
Emergency lights	0	0	1,813
Handicap toilets	4,800	4,800	4,800
Handicap access	5,000	5,000	5,000
Wheelchair lifts	0	9,500	0
Sprinkler system	4,830	5,110	1,750
Energy conservation	21,735	45,500	9,300
12(c) reconfiguration	65,801	47,501	14,224

Examples of Cost Variances

Estimating errors. ZH recommended painting 2,420 lineal feet of iron fence at Lafayette and 2,824 lineal feet at Oak Hill at \$9.10 per lineal foot. There are less than 575 lineal feet of iron fence at Lafayette and less than 750 lineal feet of iron fence at Oak Hill. ZH overestimated the cost of this item by more than \$35,000 at these two schools.

Inconsistent unit costs. The unit cost for replacing lights at L'Ouverture and Langston is \$4.50 per square foot. The unit cost for replacing lights at Blewett and Stevens is \$3.38 per square foot. L'Ouverture and Langston are overestimated by \$105,059 (93,803 square feet × \$1.12), or Stevens and Yeatman are underestimated by \$133,819 (119,482 square feet × \$1.12).

Variant reconfiguration costs. In addition to general rehabilitation of the building, including kindergarten rooms, the ZH report recommends additional 12(c) kindergarten reconfiguration. The average cost per square foot for 46 elementary schools recommended for reconfiguration is \$11.40 per square foot with a range of \$.17 to \$57.71 per square foot. The recommended reconfiguration for five schools is less than \$1 per square foot:

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Mitchell	\$.17 per square foot
Lowell	.40
Mark Twain	.59
Bryan Hill	.80
Mann	.87

The recommended reconfiguration cost for seven schools exceeds \$25 per square foot:

Irving	\$57.71 per square foot
Walnut Park	38.27
Cote Brilliante	31.10
Herzog	25.85
Roe	25.65
Farragut	25.46
Baden	25.17

ZH recommends spending 62 times as much per square foot for the five highest cost schools over the five lowest cost schools. It does not appear that any uniform standard was used in calculating kindergarten reconfiguration.

Kindergarten Reconfiguration 12(c)

School	Cost per Sq. foot	School	Cost per Sq. foot
Adams	1.09	Hodgen	18.97
Arlington	12.12	Irving	57.71
Ashland	8.18	Jackson	0
Baden	25.17	Jefferson	13.14
Banneker	1.20	Laclede	3.23
Bryan Hill	.80	Lafayette	6.06
Buder	1.12	Lexington	0
Carr Lane	13.58	Lowell	.40
Carver	0	Mann	.87
Clark	17.75	Mark Twain	.59
Clay	22.56	Marshall	19.48
Cole	1.53	Meramec	5.89
Cote Brilliante	31.10	Mitchell	.17
Cupples	19.47	Mitchell Branch	2.13
Dunbar	4.63	Oak Hill	7.83
Eliot	2.46	Peabody	0
Emerson	7.37	Roe	25.65
Farragut	25.46	Scruggs	0
Field	1.88	Scullin	2.28
Froeber	5.32	Shenandoah	7.18
Garfield	2.01	Shepard	4.17
Gundlach	17.32	Sherman	9.41
Hamilton	7.78	Sigel	0
Harrison	18.27	Walbridge	16.72
Hempstead	9.25	Walnut Park	38.27
Henry	0	Woodward	1.31
Herzog	25.85	Wyman	0

Different Standards Applied by Various A/E Firms

The estimated cost data were analyzed to determine if the 14 A/E firms employed in the survey were consistent in the preparation of cost data. A lack of consistency was noted among A/E firms and also within a single A/E firm. Lack of application of a uniform standard among A/E Firms participating in the survey, and inconsistencies within an A/E firm, can be shown by using an example of two work projects, lighting and fire alarm systems.

Examples of narrative statements. Volume 4, Books A through P, of the ZH survey contains narrative statements concerning work projects and estimated costs. The following are actual statements included in the survey books concerning lighting needs:

Ferris & Hamig

The majority of the classrooms had lighting intensities of 40+ foot-candles and thereby conform with the general lighting design recommendations for illumination intensities. However, since new suspended accoustical ceilings must be installed to conform to recommended standards, new lighting fixtures must also be installed.

**755 Booker Associates, Inc.*

The majority of the classrooms have lighting intensities of 50-60 foot-candles. This level of illumination is adequate for multi-purpose classrooms. For special purpose rooms, such as music, it is recommended that the classroom lighting be upgraded to 70 foot-candles.

Incandescent fixtures are presently in use in the corridors. Replacement with fluorescent fixtures is not recommended since the existing incandescent fixtures are decorative and provide sufficient illumination.

R.F. Burns

The majority of classrooms had lighting levels of 30-50 foot-candles. Lighting levels were lower in some rooms due to inoperative fixtures. Most of the light cent lighting. The only exception to this is the possibility of installing a decorative incandescent fixture in the main entrance to highlight the attractive features.

Campbell Design

Installation of new fluorescent light fixtures in all classrooms, to obtain 70 foot candle lighting levels as required by Board of Education is recommended. Remove all incandescent light fixtures in corridors, stairways, gyms, toilets and storage rooms and install new fluorescent light fixtures to insure 30 foot candle lighting level.

Fleming Corporation

The incandescent lighting in the corridors will be removed and new suspended ceiling with recessed fluorescent lighting installed. The existing classroom lighting fixtures will similarly be removed and replaced with recessed fluorescent fixtures in a suspended acoustical ceiling.

Gornet & Sherman

The existing lighting system in the building is obsolete and should be replaced with new energy efficient lighting fixtures and lamps with the following lighting levels to comply with the Board of Education standards:

- (a) Classrooms☐Fluorescent 40 foot-candles
- (b) Corridors☐Fluorescent 30 foot-candles
- (c) Library☐Fluorescent 70 foot-candles
- (d) Office☐Fluorescent 40 foot-candles
- (e) Multi-purpose☐H.I.D. 40 foot-candles

T.D.P. St. Louis, Inc.

The majority of the school, with the exception of the hallways and basement area, has twin lamp, 40 watt fluorescent light fixtures. The fixtures are old, and numerous ones are in need of repair, and do not provide adequate light to meet model standards. It is recommended they be replaced. The incandescent lights in the hallways should be replaced with new fluorescent fixtures.

Manske, Dieckmann and Kostecki

The majority of classrooms had lighting intensities that were inadequate as specified in the model. In accordance with the illuminating engineering recommendations for illumination intensity, of classroom activities, new lighting should be provided to the proper level. Removal of existing incandescent fixtures and replacement with new fluorescent fixtures is also recommended.

Pearce Corp.

The majority of the school, with exception of the hallways and basement area, have twin lamp, 40 watt fluorescent light fixtures. The fixtures are old, and numerous ones are in need of repair, and do not provide adequate light to meet model standards. Light readings were taken in room _____ and ranged from 30 to 50 foot-candles. If the other rooms are similarly equipped, it is recommended they be replaced.

It is recommended the incandescent lights in the hallways be upgraded with new fluorescent fixtures.

NOTE: Foot-candle readings were taken and reported in *one* room only.

Hoener Associates

The majority of classrooms conform to the Board of Education's general lighting requirement of 40 foot-candles.

756 *756 NOTE: Recommends corridor lighting be increased to 30 foot-candles. Gym/auditorium to 60 foot-candles through addition of H.I.D. Fixtures and upgrade kitchen lighting to 30 foot-candles.

Wedemeyer-Cernik-Corrubia

The majority of the original building, with exception of the hallways and basement area, have twin lamp, 40 watt fluorescent light fixtures. The fixtures are old, and numerous ones are in need of repair, and do not provide adequate light to meet model standards. It is recommended they be replaced. The incandes-fixtures were suspended fluorescent type with louvers, some of which were damaged. It is recommended that new lighting be installed to increase illumination levels to 50 foot-candles and give a more uniform appearance.

All corridors and stairways had incandescent lighting. It is recommended that fluorescent lighting be installed in these areas and any other areas with incandescent lights in the hallways should be replaced with new fluorescent fixtures.

Zurheide-Herrmann

The majority of the classrooms have lighting intensities below 70 foot-candles. In conformance with the Illuminating Engineering recommendations for illumination intensity of many school activities, upgrading classroom lighting to 70 foot-candles is recommended.

Removal of existing incandescent fixtures and replacement with new fluorescent fixtures are recommended.

Differences Relating to Construction Projects

Lighting standards. A 40 foot-candle, a 50 foot-candle, and a 70 foot-candle standard for multipurpose classrooms has been described by several A/E firms, the Winsor school model by others, and one firm described no quantification standard at all.

1. 40 foot-candles in multipurpose classrooms

Ferris & Hamig Gornet & Shearman Hoener Associates

2. 50 foot-candles in multipurpose classrooms

Booker Associates R.F. Burns

3. 70 foot-candles in multipurpose classrooms

Campbell Design Zurheide-Herrmann

4. Model school standard

T.D.P. St. Louis, Inc. Manske, Dieckmann & Kostecki Pearce Corp. Wedemeyer-Cernik-Corrubia

5. No quantifiable standard

Fleming Corporation

Booker and Associates found a classroom lighting intensity of 50 to 60 foot-candles. The R.F. Burns firm found lighting levels in classrooms to be between 30 to 50 foot-candles. Hoener Associates found a majority of classrooms conforming to the Board of Education's general lighting requirement of 40 foot-candles. The Pearce Corp. found light readings between 30 and 50 foot-candles and recommended replacement. The Zurheide-Herrmann firm found a majority of classrooms with light intensity of less than 70 foot-candles and recommended upgrading all classrooms to 70 foot-candles. The A/E firms exceeded the Board of Education lighting standards; however, there was no uniform higher standard observed.

Fire alarms. The T.D.P. St. Louis, Inc. engineering firm surveyed six regular elementary schools and described the fire alarm system in each with the following paragraph:

The present fire alarm system is inadequate. It is unable to signal an alarm prior to the development of visual smoke due to a fire condition. It is therefore recommended it be replaced with a system that will meet the model standard.

With this description for each school, the firm recommended \$20,000 for Cote Brilliante, \$0 for Clark, \$28,500 for Hempstead, \$0 for Arlington, \$21,200 for Marshall, and \$19,900 for Emerson.

757 The Manske, Dieckmann and Kostecki firm surveyed eight regular elementary *757 schools. Unlike the T.D.P. St. Louis, Inc. firm, the Manske firm did not mention fire alarms in the narrative description of needed work. There is no recommended expenditure for five of the eight schools, and a combined total of \$7,975 is recommended for the three remaining schools.

Site improvements. The A/E firms R.F. Burns, and Gornet & Shearman, did not allow for any additional parking for elementary schools surveyed. The A/E firm Manske, Dieckmann and Kostecki provided new parking for six of the eight regular elementary schools surveyed.

School	Work Project	Date	Amount
	New Parking		
Manske, Dieckmann and Kostecki			
Adams		1878	\$ 7,500
Eliot		1898	17,500
Field		1901	0
Froebel		1895/1937	7,500
Mann		1911	0
Meramec		1909	7,500
Oak Hill		1908	7,500
Shepard		1905	12,500
Wyman		1901	0
Gornet & Shearman			
Carver		1882	0

Henry	1906	0
Hodgen	1884	0
Jackson	1899	0
Sherman	1899	0
Sigel	1906	0

R. F. Burns

Dunbar	1912	0
Hamilton	1918	0
Lafayette	1907	0
Shenandoah	1926	0

Building exterior. Tuckpointing and windows were isolated for comparison. The T.D.P. St. Louis, Inc. A/E firm surveyed six elementary schools, and the tuckpointing costs averaged \$107,487 with a range of \$61,723 to \$166,049. The Gornet & Shearman A/E firm surveyed seven elementary schools, and the tuckpointing costs averaged \$8,069 with a range of \$0 to \$22,558. The T.D.P. firm estimated the tuckpointing costs for two buildings constructed in 1905 at \$155,118 and \$166,049 while the Gornet & Shearman firm estimated tuckpointing costs for two buildings constructed in 1906 at \$2,514 and \$10,569.

The R.F. Burns firm estimated window repair and replacement of lights for a 1907 building at \$18,904 and a 1912 building at \$22,240. The Manske firm estimated window repair and replacement for a 1905 building at \$72,847, a 1908 building at \$47,452 and a 1909 building at \$50,896. It is not apparent that the same consideration was given to repair and replacement of windows.

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Work Project Tuckpointing			
School	Date	Amount	
T.D.P. St. Louis, Inc.			
Arlington	1899	\$ 86,956	
Clark	1907	72,160	
Cote Brilliante	1905	155,118	
Emerson	1902	61,723	
Hempstead	1905	166,049	
Marshall	1900	102,917	
Gornet & Shearman			
Carver	1882	0	
Henry	1906	10,569	
Hodgen	1884	0	
Jackson	1899	10,154	
Sherman	1899	10,690	
Sigel	1906	2,514	
Wyman	1901	22,558	
Work Project Windows			
School	Date	Amount	
Manske, Dieckmann and Kostecki			
Adams	1878	\$115,013	
Eliot	1898	95,730	

Field	1901	51,786
Froebel	1895/1937	40,798
Mann	1911	37,609
Meramec	1909	50,896
Oak Hill	1908	47,452
Shepard	1905	72,847
R. F. Burns		
Dunbar	1912	22,240
Hamilton	1918	26,826
Lafayette	1907	18,904
Shenandoah	1926	13,607
T.D.P. St. Louis, Inc.		
Arlington	1899	8,606
Clark	1907	28,195
Cote Brilliante	1905	32,046
Emerson	1902	15,392
Hempstead	1905	12,038
Marshall	1900	176,432
Gornet & Shearman		
Carver	1882	0
Henry	1906	44,561
Hodgen	1884	9,194
Jackson	1899	30,696
Sherman	1899	20,431
Sigel	1906	8,240
Wyman	1901	34,242

759 *759 *Building interior.* The R.F. Burns firm surveyed four elementary schools and estimated the cost of repairing, refinishing and replacing floors at an average cost of \$22,211 with a range of \$0 to \$34,518. The Booker Associates firm surveyed 10 elementary schools and estimated the cost of refinishing, repairing and replacing floors at an average cost of \$86,655 with a range of \$23,349 to \$159,663. The Burns firm estimated the cost of a building constructed in 1907 at \$23,767 and a building constructed in 1918 at \$34,518. The Booker Associates firm estimated the cost for a building constructed in 1918 at \$82,379 and a 1910 building at \$123,109.

		Work Project Floors	
School		Date	Amount
R. F. Burns			
Dunbar		1912	\$ 30,560
Hamilton		1918	34,518
Lafayette		1907	23,767
Shenandoah		1926	0
Booker Associats, Inc.			
Cupples		1918	82,379
Gundlach		1931	152,503
Peabody		1957	29,902
Roe		1919	24,389
Ashland		1910	123,109

Ashland Branch	1930	24,349
Carr Lane	1959	70,117
Herzog	1937	49,358
Jefferson	1960	150,786
Walbridge	1922	159,663

Mechanical. Automatic air dampers, new return air systems and pneumatic controls were isolated for a closer examination. The Booker Associates firm surveyed 10 elementary schools and was consistent in the amount recommended for automatic dampers for five of the 10 schools. No expenditures were recommended for the remaining five schools. The Ferris firm recommended an amount equal to the Booker estimate for one of five schools. No expenditures were recommended for the remaining four schools. Campbell Design surveyed nine elementary schools and recommended an expenditure similar to the Booker estimate for one school and no recommended expenditure for the remaining eight schools. The Manske firm recommended an estimated cost of \$105,250 for a school constructed in 1898 and \$152,400 for a school constructed in 1909. Campbell Design recommended an estimated cost of \$20,000 for a building constructed in 1895, and the Booker firm recommended an estimated cost of \$21,000 for a building constructed in 1910.

The Ferris & Hamig firm surveyed five regular elementary schools and recommended no expenditures for return air systems.

The Booker firm surveyed 10 elementary schools and recommended no expenditures for repair or replacement of pneumatic controls. The T.D.P. firm recommended repair, replacement or new pneumatic controls in five of six schools ranging in cost from \$0 to \$67,500.

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Work Project		
New Automatic Outside Air Dampers		
School	Date	Amount
Booker Associates, Inc.		
Cupples	1918	\$ 21,000
Gundlach	1931	21,000
Peabody	1957	0
Roe	1919	0
Ashland	1910	21,000
Ashland Branch	1930	21,000
Carr Lane	1959	0
Herzog	1937	21,000
Jefferson	1960	0
Walbridge	1922	0
Ferris & Hamig, Inc.		
Bryan Hill	-	0
Buder	1920	21,000
Lowell	1926	0
Scruggs	1917	0
Woodward	1921	0
Campbell Design		
Banneker	1940	0
Cole	1931/1970	0
Farragut	1906	23,800
Garfield	1937	0
Laclede	1915	0

Lexington	1964	0
Mark Twain	1912	0
Mitchell	1964	0
Mitchell Branch	1957	0

Manske, Dieckmann and Kostecki

Adams	1878	21,000
Eliot	1898	105,250
Field	1901	0
Froebel	1895/1937	70,960
Mann	1911	0
Meramec	1909	152,400
Oak Hill	1908	0
Shepard	1905	0

Work Project
New Return Air System

School	Date	Amount
Gornet & Shearman		
Carver	1882	\$ 0
Henry	1906	80,000
Hodgen	1884	0
Jackson	1899	0
Sherman	1899	71,000
Sigel	1906	0
Wyman	1901	35,000
Ferris & Hamig, Inc.		
Bryan Hill		0
Buder	1920	0
Lowell	1926	0
Scruggs	1917	0
Woodward	1921	0

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Work Project
Pneumatic Controls

School	Date	Amount
Booker Associates		
Cupples	1918	\$ 0
Gundlach	1931	0
Peabody	1957	0
Roe	1919	0
Ashland	1910	0
Ashland Branch	1930	0
Carr Lane	1959	0
Herzog	1937	0
Jefferson	1960	0
Walbridge	1922	0

T.D.P. St. Louis, Inc.

Arlington	1899	45,000
Clark	1907	8,000
Cote Brilliante	1905	0
Emerson	1902	50,000
Hempstead	1905	67,500
Marshall	1900	41,000

Electrical. Booker Associates surveyed 10 schools and recommended repair, replacement or a new fire alarm system in only one of the 10 schools. The Gornet firm recommended repair, replacement or new fire alarm systems in six of seven schools surveyed, with costs ranging from \$0 to \$80,000.

Electrical outlets vary from \$0 to \$20,250 for schools of similar size.

Electrical service includes replacement of distribution panel boards, replacement of service panel name plates and replacement or new electrical service. Costs vary considerably for schools of similar age and construction.

Work Project
Fire Alarm Systems

School	Date	Amount
Gornet & Shearman		
Carver	1882/1978	\$ 0
Henry	1906	20,000
Hodgen	1884/1964	45,000
Jackson	1899/1964	26,000
Sherman	1899	80,000
Sigel	1906/1978	80,000
Wyman	1901	65,000

Booker Associates

Cupples	1918	0
Gundlach	1931	0
Peabody	1957	0
Roe	1919/1926	0
Ashland	1910	0
Ashland Branch	1930	10,800
Carr Lane	1959	0
Herzog	1937	0
Jefferson	1960	0
Walbridge	1922/1978	0

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Work Project
Electrical Outlets

School	Date	Square Feet	Amount
Manske, Dieckmann and Kostecki			

Adams	1878	63,201	\$ 6,966
Eliot	1898	46,380	15,066
Field	1901	47,030	12,393
Froebel	1895/1937	41,741	13,284
Mann	1911	52,452	16,767
Meramec	1909	38,946	0
Oak Hill	1908	49,531	14,418
Shepard	1905	55,998	18,063
Wyman	1901	53,224	10,692

Gornet & Shearman

Carver	1882/1978	51,760	4,212
Henry	1906	66,645	18,792
Hodgen	1884/1964	63,211	20,250
Jackson	1899/1964	52,085	11,340
Sherman	1899	47,698	14,742
Sigel	1906/1978	67,605	13,446

R. F. Burns

Dunbar	1912	67,284	7,614
Hamilton	1918	60,110	7,614
Lafayette	1907	50,946	6,399
Shenandoah	1926	34,344	3,159

Ferris & Hamig

Bryan Hill	89	89	\$ 0
Buder	1920	89	7,047
Lowell	1926	89	6,561
Scruggs	1917	89	7,290
Woodward	1921	89	8,100

Work Project
Electrical Services

School	Date	Amount
--------	------	--------

Gornet & Shearman

Carver	1882/1978	\$ 0
Henry	1906	293,000
Hodgen	1884/1964	0
Jackson	1899/1964	162,000
Sherman	1899	174,000
Sigel	1906/1978	150,000
Wyman	1901	185,000

Booker Associates

Cupples	1918	12,400
Gundlach	1931	12,400

Peabody	1957	0
Roe	1919/1926	12,400
Ashland	1910	0
Ashland Branch	1930	75
Carr Lane	1959	13,000
Herzog	1937	0
Jefferson	1960	0
Walbridge	1922/1978	12,400

T.D.P. St. Louis, Inc.

Arlington	1899	0
Clark	1907	0

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School	Date	Amount
Cote Brilliante	1905	73,000
Emerson	1902	45,000
Hempstead	1905	52,000
Marshall/Branch	1900	46,500

Health, safety, handicapped. Three work projects, sprinkler systems, stairwell enclosures, and labeled doors (interior fire-retardant doors), were isolated for comparison among A/E firms. The Gornet firm surveyed seven elementary schools and did not recommend any sprinkler systems. Booker Associates surveyed 10 elementary schools and recommended sprinkler systems for three schools.

The T.D.P. firm recommended stairwell enclosures for all six elementary schools surveyed, the Manske firm for six of eight schools surveyed, and Campbell Design for only two of 10 elementary schools surveyed.

The R.F. Burns firm recommended labeled doors for only one of four elementary schools surveyed at an estimated cost of \$10,000. T.D.P. recommended labeled doors for all six elementary schools surveyed, with costs ranging from \$27,750 to \$54,000.

Work Project Sprinkler System

School	Date	Amount
Booker Associates		
Cupples	1918	\$ 0
Gundlach	1931	0
Peabody	1957	0
Roe	1919/1926	0
Ashland	1910	7,350
Ashland Branch	1930	0
Carr Lane	1959	0
Herzog	1937	7,350
Jefferson	1960	0
Walbridge	1922/1978	3,900

Gornet & Shearman

Carver	1882	0
Henry	1906	0
Hodgen	1884	0
Jackson	1899	0
Sherman	1899	0
Sigel	1906	0
Wyman	1901	0

Work Project
Stairwell Enclosures

School	Date	Amount
Campbell Design		
Banneker	1940	\$ 0
Cole	1931/1970	0
Farragut	1906	30,000
Garfield	1937	30,000
Laclede	1915	0
Lexington	1964	0
Mark Twain	1912	0
Mitchell	1964	0
Mitchell Branch	1957	0
Scullin	1927/1970	0

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School	Date	Amount
Manske, Dieckmann and Kostecki		
Adams	1878	0
Eliot	1898	40,000
Field	1901	0
Froebel	1895/1937	30,000
Mann	1911	50,000
Meramec	1901	30,000
Oak Hill	1908	30,000
Shepard	1905	30,000

T.D.P. St. Louis, Inc.

Arlington	1899	30,000
Clark	1907	30,000
Cote Brilliante	1905	30,000
Emerson	1902	30,000
Hempstead	1905	30,000
Marshall	1900	40,000

Work Project
Labeled Doors

School	Date	Amount
T.D.P. St. Louis, Inc.		
Arlington	1899	\$ 27,750
Clark	1907	36,000
Cote Brilliante	1905	37,500
Emerson	1902	37,500
Hempstead	1905	50,250
Marshall	1900	54,000

R. F. Burns

Dunbar	1912	0
Hamilton	1918	0
Lafayette	1907	0
Shenandoah	1926	10,000

Energy Conservation. The Gornet firm recommended energy conservation work projects in seven elementary schools surveyed averaging \$11,800, with a range of \$3,908 to \$36,207. The R.F. Burns firm recommended energy conservation work projects in all four elementary schools surveyed averaging \$108,828, with a range of \$57,075 to \$145,000.

Work Project
Energy Conservation

School	Date	Amount
R. F. Burns		
Dunbar	1912	\$122,000
Hamilton	1918	145,000
Lafayette	1907	111,240
Shenandoah	1926	57,075

Gornet & Shearman

Carver	1882	36,207
Henry	1906	7,525
Hodgen	1884	3,908
Jackson	1899	9,387
Sherman	1899	4,675

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School	Date	Amount
Sigel	1906	9,100
Wyman	1901	6,800

12(c) reconfigurations. The estimated costs of 12(c) reconfigurations for elementary schools average \$80,101 with a range of \$0 to \$395,672. The middle school 12(c) reconfiguration costs average \$49,692 with a range of \$2,354 for Grant School to a high of \$161,450 for Langston School, one of the Board's newer schools

constructed in 1964. The 12(c) reconfiguration costs for 16 intracity magnets average \$109,642, with a range of \$0 for Health Care and Wade to \$469,086 for Enright.

Appendix A

766 Schools Surveyed by 14 Engineering Firms in Zurheide-Herrmann Report Zurheide-Herrmann, Inc. Beaumont Central VPA Cleveland NJROTC McKinley Northwest Roosevelt Soldan Southwest Sumner Vashon Wedemeyer-Cernik-Corrubia, Inc. Health Care Math/Science Blow Dewey Fanning Grant Long Mason Continued Education Gallaudet Longfellow Michael Clark Branch #1 R. L. Praprotnik & Associates, Inc. Management Center Metro O'Fallon Hoener Associates, Inc. Academic/Athletic Academy Cook Enright Ford Stowe Ford Branch Pearce Corp. Blewett Columbia Hickey Langston L'Ouverture Marquette Mullanphy Nottingham Simmons Webster Yeatman Smith Fleming Corporation Benton Fremont Humboldt Monroe Pruitt Baden Busch Clay Harrison Irving Kennard Riddick Shaw Walnut Park Windsor Gardenville R. F. Burns Madison Dunbar Hamilton Lafayette Shenandoah Simmons Branch Ferris & Hamig, Inc. Wade Bryan Hill Buder Lowell Scruggs Stix Woodward Booker Associates, Inc. Mallinckrodt Cupples Gundlach Peabody Roe Wilkinson *766 Woerner Ashland Ashland Branch Carr Lane Herzog Jefferson Walbridge Manske, Dieckmann and Kostecki Adams Eliot Field Froebel Mann Meramec Oak Hill Shepard Field Branch Gornet & Shearman Architects & Engineers Carver Henry Hodgen Jackson Sherman Sigel Wyman T.D.P. St. Louis, Inc. Arlington Clark Cote Brillante Emerson Euclid Hempstead Lyon Marshall Marshall Branch Campbell Design Clinton King Stevens Turner Turner Branch Washington Williams Ames Banneker Cole Curriculum Emerson Branch Farragut Garfield Laclede Lexington Mark Twain Mitchell Branch Mitchell Scullin Waring Clark Branch #2 Cook Branch #1 Dunbar Branch Euclid Branch Farragut Br. #1 Farragut Branch #2 Hamilton Branch #1 Hamilton Branch #2 Hempstead Branch Williams Branch #1 Norman Stanley Fott & Assoc. Carr Carr Lane Branch Charless Clinton Branch Howard Howard Branch Lindenwood Maddox Williams Branch #2

ATTACHMENT 5

Construction Projects Proposed for Budgeting

Cost of added facilities. New construction should replace space lost as a result of consolidation of enrollment and closing of obsolete buildings. The method of assigning proposed budgeted costs for these building additions is shown below:

1. Classroom additions to four nonintegrated elementary schools: Carver, Herzog, Lexington, Lowell. Each would be a two-story, masonry, classroom addition at grade entry of 19,448 square feet. This would provide 12 classrooms of 840 square feet each, two 12-foot corridors 1,560 square feet each, four toilets at 560 square feet each, and two stairwells at 1,120 square feet each. Add 10 percent to the total of 17,680 above for service area space ($17,680 + 1,768 = 19,448$ square feet per addition). At \$80 per square foot, each addition would cost \$1,555,840.00. The total budgeted cost is \$6,223,360.00.
- 767 2. As noted previously, 19 nonintegrated, 17 integrated and seven magnet elementary school playrooms are substandard in size and height. Forty-three new elementary gymnasiums shall be constructed on existing sites. Unit prices for construction of elementary gymnasiums found in the Board's report and as proposed by various Z/E firms, varied from a low of \$51 per *767 square foot to a high of \$80.16 per square foot. A unit cost of \$75 per square foot is used in this budget. Thus, a 5,000-square foot gymnasium would cost \$375,000.00. Forty-three new gymnasiums at a total cost not to exceed \$16,125,000. Present playrooms shall be reconfigured to provide additional regular instructional rooms and small classrooms.
3. Present elementary playrooms to be replaced by proposed gymnasium additions can be reconfigured to free up 37 regular classrooms and eight small rooms (equivalent to 41 regular classrooms) in nonintegrated schools; 24 regular and nine small classrooms (equivalent to 28 regular classrooms) in the integrated elementary schools; and seven regular and four small classrooms (equivalent of nine regular classrooms) in intradistrict magnets. The cost of such reconfigurations is estimated to be \$20,000.00 per regular classroom and \$10,000.00 for a small

room. The total cost to reconfigure all playrooms would be \$1,570,000.00. (Zurheide-Herrmann unit costs have been used in setting these estimated costs.)

4. One hundred twelve regular classrooms reserved for special education (see room allocation charts) shall be divided into 224 small classrooms. At \$5,000.00 per room, this cost would be \$540,000.00.

ATTACHMENT 6

BOARD RECEIPTS, EXPENDITURES 1985-86

July 17, 1986 Members St. Louis Board of Education

Dear Member:

We enclose the Consolidated Income Report for the period ending June 30, 1986. With the close of the fiscal year, we present an analysis of our income compared with income received for the previous year.

Source/Type	LOCAL AND COUNTY TAXES		Gain/Loss
	1984-85	1985-86	
Current Taxes			
Real Property	\$36,393,697	\$38,005,792	+\$1,612,095
Personal Property	11,462,195	10,509,637	- 952,558
Surplus Commissions	397,528	430,347	+ 32,819
Merch. & Mfctrs. Inv. [*]	9,472,573	9,076,509	- 396,064
Railroads & Utilities [**]	1,814,951	2,796,999	+ 982,048
Totals	\$26,456,274	\$26,669,484	\$+ 213,210

CONCLUSION

Our gain in local income from real and personal property tax receipts amounts to approximately 2.1%. This minimum gain is insufficient to keep pace with the cost of goods and services being provided by the school district. Although our local receipts did show a minimum increase, the school district must, by necessity, seek a new local source of revenue.

The passage of a \$3.75 tax levy was accomplished in June. This levy will support our operations in 1986-87. Any increase in the tax levy above \$3.75 will require a super majority vote from the voters of St. Louis.

Source/Type	SELECTED OTHER LOCAL INCOME		Gain/Loss
	1984-85	1985-86	
School District Trust Fund	\$21,721,435	\$21,813,942	\$+ 92,507
Delinquent Real and Personal Property Tax	2,292,621	3,076,851	+ 784,230
Earnings on Investments	2,118,375	1,593,577	- 524,798
Reim/Various Funds	323,843	185,114	- 138,729
Totals	\$26,456,274	\$26,669,484	\$+ 213,210

SELECTED STATE INCOME RECEIPTS			
Source/Type	1984-85	1985-86	Gain/Loss
Minimum Guarantee	\$56,785,010	\$64,946,502	\$+8,161,492
Exceptional Children	6,447,637	7,494,271	+1,046,634
Pupil Transportation	4,784,135	4,660,685	- 123,450
Fiscal Incentive	1,817,054	948,503	- 868,551
Textbook Aid	2,938,288	2,952,130	+ 13,842
Vocational Education	1,472,131	86,423	-1,385,708
Other State Income	-0-	1,694,099	+1,694,099
Totals	\$74,244,255	\$82,782,613	\$+ 8,538,358

CONCLUSION

Minimum Guarantee ☞ Increases in the State Aid Formula and the inclusion of Home District Fiscal Incentives were responsible for the significant increases shown.

Exceptional Children Aid ☞ The allocation of unit costs and increases in our program provided the additional revenue received in 1985-86.

Fiscal Incentives ☞ In 1984-85, we received a double payment that included monies due the district from 1983-84.

Vocational Education ☞ Policy changes in the administration of vocational education monies provided a double payment in 1984-85.

Other State Income ☞ The \$1,694,099 represents a Court Order requiring the State of Missouri to pay legal fees associated with our desegregation case.

Very truly yours, /s/ Sam Lawson SAM LAWSON Treasurer SL/pp Enclosures cc: Jerome B. Jones John P. Archetko Norman Walsh William Pearson Louis Ratz Doris D. Eldridge James Lydon Walter Wallace Cozy Marks

CONSOLIDATED INCOME REPORT

JULY 1, 1985 THROUGH JUNE 30, 1986

SOURCE	ESTIMATED INCOME JULY 1, 1985	REVISED ESTIMATE JUNE 4, 1986	TOTAL INCOME JUNE 30, 1986	% OF INCOME RECEIVED	INCOME RECEIVED JUNE 30, 1986
LOCAL INCOME					
Current Taxes					
Real Property	\$ 38,500,000	\$ 37,419,262	\$ 38,005,792	101.5	\$ 36,393,6
Personal Property	11,100,000	10,424,312	10,509,637	100.8	11,462,1
Surplus Commissions	90,000	269,185	269,185	100.0	101,8
Financial Institutions	220,000	430,347	430,347	100.0	397,5
Merchants & Mfctrs.	-0-	2,025,000	2,028,913	100.0	9,472,5
School District Trust Fund	22,000,000	22,000,000	21,813,942	99.2	21,721,4
Other Local Income	8,500,000	7,047,596	7,047,596	100.0	-
Interest on Taxes					
Financial Institutions	15,000	26,244	26,244	100.0	29,2
Protested Taxes	200,000	396,768	396,768	100.0	369,0

Delinquent Taxes					
Real Property	2,000,000	3,257,504	2,670,975	82.0	1,896,5
Personal Property	300,000	491,201	405,876	82.6	396,0
Merchants & Mfctrs.	-0-	175,000	173,854	99.3	-

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SOURCE	ESTIMATED INCOME JULY 1, 1985	REVISED ESTIMATE JUNE 4, 1986	TOTAL INCOME JUNE 30, 1986	% OF INCOME RECEIVED	INCOME RECEIVED JUNE 30, 1
LOCAL INCOME					
Other Local Income					
Earnings on Investments	\$ 1,400,000	\$ 1,700,000	\$ 1,593,577	93.7	\$ 2,118,3
Rentals	14,000	18,000	17,765	100.0	21,8
Sale of Property	8,000	62,085	63,359	102.1	5,0
Reim/					
Various Funds	325,000	125,000	185,114	148.1	323,843
Sundries	250,000	285,000	319,706	112.2	308,8
Tuition	-0-	-0-	5,240	-0-	-
LRA Tax Suit Sale	-0-	264,740	264,740	-0-	-
Repayment of Loan	-0-	-0-	-0-	-0-	660,8
TOTAL LOCAL INCOME	<u>\$ 84,922,000</u>	<u>\$ 86,417,243</u>	<u>\$ 86,228,630</u>	<u>99.8</u>	<u>\$ 85,679,0</u>
COUNTY INCOME					
Fees, Fines & Forfeitures	\$ 120,000	\$ 110,000	\$ 108,316	98.5	\$ 112,9
Railroad & Utilities	2,747,793	2,046,448	2,046,448	100.0	1,814,9
Surcharge Taxes	-0-	750,551	750,551	100.0	-
County Stock Insurance	73,000	64,900	64,900	100.0	74,3
TOTAL COUNTY INCOME	<u>\$ 2,940,793</u>	<u>\$ 2,971,899</u>	<u>\$ 2,970,215</u>	<u>99.9</u>	<u>\$ 2,002,2</u>
STATE INCOME					
Minimum Guarantee	\$ 63,107,000	\$ 64,907,547	\$ 64,946,502	100.1	\$ 56,785,0
Fair Share Fund	1,700,000	1,640,000	1,645,201	100.3	1,772,6
Exceptional Children	6,500,000	7,304,434	7,494,271	102.6	6,447,6
Handicapped Census	8,000	9,166	9,166	100.0	8,8
Pupil Transportation	4,075,000	4,665,747	4,660,685	99.9	4,784,1
Fiscal Incentives	-0-	856,940	948,503	110.7	1,817,0
Foreign Ins. Tax	2,850,000	2,952,130	2,952,130	100.0	2,938,2
Vocational Education	740,000	86,423	86,423	100.0	1,472,1
Other State Income	-0-	1,689,099	1,694,099	100.3	-
TOTAL STATE INCOME	<u>\$ 78,980,000</u>	<u>\$ 84,111,486</u>	<u>\$ 84,436,980</u>	<u>100.4</u>	<u>\$ 76,025,7</u>
FEDERAL INCOME					
Public Law 874	\$ 20,000	\$ 52,831	\$ 52,831	100.0	\$ 29,2
Vocational Education	400,000	67,938	23,868	35.2	576,1
TOTAL FEDERAL INCOME	<u>\$ 420,000</u>	<u>\$ 120,769</u>	<u>\$ 76,699</u>	<u>63.6</u>	<u>\$ 605,4</u>

OTHER INCOME

Transfers & Reassignments	\$	25,000	\$	379,205	\$	379,205	100.0	\$	510,7
TOTAL OTHER INCOME	\$	25,000	\$	379,205	\$	379,205	100.0	\$	510,7
GRAND TOTAL		<u>\$167,287,793</u>		<u>\$174,000,602</u>		<u>\$174,091,729</u>	<u>100.1</u>		<u>\$164,823,3</u>

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SUMMARY OF RECEIPTS AND EXPENDITURES
JULY 1, 1985 THROUGH JUNE 30, 1986

RECEIPTS

FUND	DESCRIPTION	JUNE	YR. TO DATE 6/30/86	AVAILABLE BALANCE
	FOUNDATIONS, CONTRIBUTIONS AND INCIDENTALS			
64-356	Metro Des. Stl. Plan-			
Mini Contr.	\$ -0-	\$ -0-	\$ (312)	\$ (312)
64-446	IntraCity Des.-			
Mini Contr. 83/84	-0-	-0-	16,115	16,115
65-446	IntraCity Des.-			
Mini Contr. 84/85	-0-	58,516	47,241	105,757
66-446	IntraCity Des.-			
Mini Contr. 85/86	-0-	63,713	18,039	81,752
65-566	Voc. Educ. Des. Mini Contr. 84/85	-0-	-0-	5,764
66-566	Voc. Educ. Des. Mini Contr. 85/86	-0-	52,557	-0-
64-736	Foundations, Contr. & Incid. 83/84	13,228	351,403	2,815,640
65-736	Foundations, Contr. & Incid. 84/85	2,066	138,270	132,246
66-736	Foundations, Contr. & Incid. 85/86	83,815	847,877	103,785
64-746	School Site Subsidy	987	4,469	32,813
	TOTALS	<u>\$ 100.096</u>	<u>\$ 1,516,805</u>	<u>\$ 3,171,331</u>

FEDERAL PROGRAMS

65-236	Chapter I, ECIA, 84/85	\$ -0-	\$ 486,702	\$ (399,188)
66-236	Chapter I, ECIA, 85/86	15,305	8,737,888	-0-
65-256	Pl. 89-750 Adult Basic Educ.	-0-	116,472	(53,786)
66-256	Pl. 89-750 Adult Basic Educ.	-0-	422,175	1,673
65-266	Community Dev. Agency	-0-	652,268	19,650
66-266	Community Dev. Agency	171,094	891,042	-0-
65-276	Pl. 94-142 Spec. Educ. 84/85	-0-	82,040	324,565
66-276	Pl. 94-142 Spec. Educ. 85/86	3,028	1,267,812	6,094
64-296	Mini Federal 83/84	49,141	62,140	43,616
65-296	Mini Federal 84/85	-0-	100,337	572,931
66-296	Mini Federal 85/86	23,003	299,374	-0-
66-586	Magnet Schls. Ass't IntraCity 85/86	1,200,002	3,410,325	-0-
65-596	IntraCity Des. Plan Chpt. II 84/85	-0-	322,729	(22,729)
66-596	IntraCity Des. Plan Chpt. II 85/86	17	190,816	-0-

65-626	Chapter II 84/85	-0-	-0-	47,168
66-626	Chapter II 85/86	21,621	308,001	-0-
	TOTALS	<u>\$ 1,483,211</u>	<u>\$ 17,350,121</u>	<u>\$ 539,994</u>

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SUMMARY OF RECEIPTS AND EXPENDITURES
JULY 1, 1985 THROUGH JUNE 30, 1986

		RECEIPTS		
FUND	DESCRIPTION	JUNE	YR. TO DATE 6/30/86	AVAILABLE BALANCE
	GENERAL FUND			
66-116	Incidental	\$ 3,747,377	\$ 77,483,880	\$ 9,691,458
66-126	Teachers	6,459,512	91,193,696	3,592,051
66-136	Building	1,436	88,521	334,654
66-156	Free Textbook	-0-	2,972,989	88,083
66-246	Adult Education	7,282	1,479,018	1,016,781
66-286	HB 474 Reimbursements	200,000	2,352,644	137,528
64-346	Metro Deseg. Stlment Plan 83/84	-0-	-0-	27,874
65-346	Metro Deseg. Stlment Plan 84/85	-0-	1,063,850	6,389,329
66-346	Metro Deseg. Stlment Plan 85/86	3,838,691	24,350,073	365,735
64-536	Metro Deseg. Stlment Plan 83/84	-0-	196,956	(191,975)
65-536	Metro Deseg. Stlment Plan 84/85	-0-	167,182	1,238,588
66-556	Metro Deseg. Stlment Plan 85/86	1,310,101	10,005,349	45,842
64-556	Voc. Educ. Deseg. Stlment Plan 83/84	-0-	-0-	1,851
65-556	Voc. Educ. Deseg. Stlment Plan 84/85	579	13,056	211,691
66-556	Voc. Educ. Deseg. Stlment Plan 85/86	262,896	807,794	-0-
63-576	IntraCity Deseg. Plan 82/83	-0-	-0-	42,655
64-576	IntraCity Deseg. Plan 83/84	-0-	405	769
65-576	IntraCity Deseg. Plan 84/85	-0-	208,726	3,012,170
66-576	IntraCity Deseg. Plan 85/86	2,498,797	16,197,961	3,671,187
	TOTALS	<u>\$18,326,671</u>	<u>\$ 228,582,100</u>	<u>\$ 29,676,271</u>
66-616	SCHOOL BOND DEBT REVENUE FUND	-0-	-0-	25,000
66-166	ESCROW FUND	1,870,260	22,610,258	2,562,258
66-516	SCHOOL LUNCHROOM FUND	1,179,074	13,074,266	2,097,362
	FOUNDATION, CONTRS. & INC.	100,096	1,516,805	3,171,331
	FEDERAL PROGRAMS	1,483,211	17,350,121	539,994
	GRAND TOTAL	<u>\$22,959,312</u> =====	<u>\$ 283,133,550</u> =====	<u>\$ 38,072,216</u> =====

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Table XII

Local Tax Rates, by Fund, 1985-86
Fund

	Incidental	Teachers	Debt Service	Building	Total
Affton	\$0.85	\$1.38	\$0.46	\$0.10	\$2.79
Bayless	0.65	1.08	0.00	0.00	1.73
Brentwood	0.76	1.41	0.06	0.15	2.38
Clayton	0.89	1.17	0.04	0.30	2.40
Ferguson-Florissant	1.28	1.71	0.64	0.13	3.76
Hancock Place	0.80	0.79	0.41	0.03	2.03
Hazelwood	1.00	1.53	0.50	0.08	3.11
Jennings	1.39	1.86	0.41	0.00	3.66
Kirkwood	0.85	1.51	0.00	0.23	2.59
Ladue	0.63	1.25	0.43	0.04	1.96
Lindbergh	0.46	1.44	0.12	0.12	2.14
Maplewood	0.88	1.38	0.42	0.00	2.68
Mehlville	0.62	1.34	0.67	0.14	2.77
Normandy	0.64	1.76	0.39	0.07	2.86
Parkway	0.99	1.80	0.24	0.39	3.42
Pattonville	0.70	1.40	0.25	0.13	2.48
Ritenour	1.13	1.16	0.07	0.00	2.36
Riverview	0.85	1.51	0.54	0.00	2.90
Rockwood	1.06	1.43	0.75	0.09	3.33
University City	1.06	1.67	0.00	0.29	3.02
Valley Park	1.41	1.31	0.00	0.00	2.72
Webster Groves	0.77	1.78	0.34	0.25	3.14
Wellston	2.68	0.20	1.25	0.00	4.13
	\$0.97	\$1.39	\$0.34	\$0.10	\$2.80
Special	0.19	0.15	0.00	0.00	0.34
County Average	\$1.16	\$1.54	\$0.34	\$0.10	\$3.14
St. Louis	\$2.15	\$1.01	\$0.00	\$0.00	\$3.16

Table XIII

Current Revenues, Per Pupil, 1985-86

District	Eligible Pupils	Local Tax Revenue per EP	Total Current Revenue per EP
Affton	1,981	\$2,504	\$ 4,297
Bayless	1,284	968	2,786
Brentwood	781	2,966	5,220
Clayton	1,640	4,664	7,084
Ferguson-Florissant	10,672	1,968	4,773
Hancock Place	1,486	713	2,527
Hazelwood	15,513	1,593	3,107

Jennings	2,298	1,367	2,765
Kirkwood	4,288	2,238	3,711
Ladue	2,968	3,278	4,988
Lindbergh	4,764	1,911	3,762
Maplewood	1,364	1,920	3,271
Mehlville	9,133	1,516	2,851
Normandy	6,187	797	2,871
Parkway	20,447	2,329	3,671
Pattonville	6,147	2,044	3,812
Ritenour	6,440	1,013	3,169

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District	Eligible Pupils	Local Tax Revenue per EP	Total Current Revenue per EP
Riverview Gardens	4,370	\$1,186	\$ 2,970
Rockwood	10,771	1,753	3,036
University City	4,763	1,384	3,509
Valley Park	676	1,646	4,090
Webster Groves	3,530	2,118	3,581
Wellston	1,025	650	2,955
Special District	4,815	5,618	12,536
County	127,343	\$1,960	\$ 3,880
St. Louis	49,151	\$1,243	\$ 4,589

Table XIV

Desegregation Receipts Converted to Local Property Tax Rate, 1985-86

District	Desegregation Receipts	One-Cent Yield on Tax Rate	Equivalent Tax Rate
Affton	\$ 899,535	\$ 17,781	\$0.5059
Bayless	286,347	7,182	0.3987
Brentwood	619,431	9,731	0.6366
Clayton	1,164,327	31,871	0.3653
Ferguson-Florissant	0	55,864	0.0000
Hancock Place	269,029	4,512	0.5963
Hazelwood	426,191	79,464	0.0536
Jennings	0	8,585	0.0000
Kirkwood	1,013,156	37,053	0.2734
Ladue	820,638	49,642	0.1653
Lindbergh	1,350,394	42,533	0.3175
Maplewood	0	9,737	0.0000
Mehlville	1,174,664	49,978	0.2350
Normandy	0	17,246	0.0000
Parkway	5,379,744	139,223	0.3864
Pattonville	2,027,317	50,664	0.4001
Ritenour	1,188,281	27,637	0.4300

Riverview Gardens	0	17,874	0.0000
Rockwood	1,851,342	56,707	0.3265
University City	0	21,827	0.0000
Valley Park	478,164	4,091	1.1688
Webster Groves	653,031	23,811	0.2743
Wellston	0	1,614	0.0000
	<u>\$19,601,591</u>	<u>\$ 33,240</u>	<u>\$0.2800</u>
Special District	176,362	795,656	0.0020
County	<u>\$19,777,953</u>	<u>\$828,896</u>	<u>\$0.2820</u>
St. Louis	\$32,841,492	\$193,391	\$1.7000

Table XV

Current Expenditures per Pupil, 1985-86

District	Eligible Pupils	Current Expenditures	Current Expenditures per EP
Affton	1,981	\$ 7,985,292	\$ 4,031
Bayless	1,284	3,807,977	2,966
Brentwood	781	4,079,471	5,223
Clayton	1,640	11,484,264	7,002
Ferguson-Florissant	10,672	39,832,426	3,732
Hancock Place	1,486	3,700,404	2,490

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District	Eligible Pupils	Current Expenditures	Current Expenditures per EP
Hazelwood	15,513	\$ 49,569,276	\$ 3,195
Jennings	2,298	5,611,377	2,442
Kirkwood	4,288	15,910,715	3,710
Ladue	2,968	15,277,887	5,148
Lindbergh	4,764	16,863,801	3,540
Maplewood	1,364	5,590,715	4,099
Mehlville	9,133	27,230,058	2,981
Normandy	6,187	17,880,291	2,890
Parkway	20,447	71,041,004	3,474
Pattonville	6,147	24,542,353	3,992
Ritenour	6,440	21,512,504	3,340
Riverview Gardens	4,370	12,496,506	2,860
Rockwood	10,771	30,900,812	2,869
University City	4,763	17,124,085	3,595
Valley Park	676	2,771,009	4,099
Webster Groves	3,530	13,300,413	3,768
Wellston	1,025	3,601,893	3,514
Special District	4,815	55,711,761	11,571

County	127,343	\$477,826,294	\$ 3,752
St. Louis	49,151	\$210,737,649	\$ 4,288

Table XVI

Current Expenditures, Instruction
Support Services, 1985-86

District	Instruction		Support Services	
	Amount	Per EP	Amount	Per EP
Affton	\$ 4,906,525	\$2,477	\$ 3,078,767	\$1,554
Bayless	2,515,619	1,959	1,292,358	1,007
Brentwood	2,520,497	3,227	1,558,974	1,996
Clayton	6,324,273	3,856	5,159,991	3,146
Ferguson-Florissant	25,802,440	2,418	14,029,986	1,314
Hancock Place	2,602,421	1,751	1,097,983	739
Hazelwood	30,280,676	1,952	19,288,600	1,243
Jennings	3,398,090	1,479	2,213,287	963
Kirkwood	9,597,209	2,238	6,313,506	1,472
Ladue	8,903,426	3,000	6,374,461	2,148
Lindbergh	10,841,672	2,276	6,022,129	1,264
Maplewood	3,397,135	2,491	2,193,580	1,608
Mehlville	17,024,955	1,864	10,205,103	1,117
Normandy	11,692,024	1,890	6,188,267	1,000
Parkway	44,207,392	2,162	26,833,612	1,312
Pattonville	14,497,369	2,358	10,044,984	1,634
Ritenour	13,349,490	2,072	8,163,014	1,268
Riverview Gardens	8,035,823	1,839	4,460,683	1,021
Rockwood	19,512,496	1,812	11,388,316	1,057
University City	10,774,466	2,262	6,349,619	1,333
Valley Park	1,670,622	2,471	1,100,387	1,628
Webster Groves	8,410,745	2,383	4,889,668	1,385
Wellston	2,068,916	2,018	1,532,977	1,496
Special District	35,240,049	7,319	20,471,712	4,252
County	\$297,574,330	\$2,337	\$180,251,964	\$1,415
St. Louis	\$120,691,190	\$2,456	\$ 90,046,459	\$1,832

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Table XVII

Dollar Value of Difference between County and City
Current Support Service Expenditures, 1985-86

Support Service Category/ EP	County Expenditure/EP	St. Louis Expenditure/	Dollar Value of Difference per EP
---------------------------------	--------------------------	---------------------------	--------------------------------------

Attendance	\$ 11	\$ 30	\$ 933,869
Guidance	109	109	0
Health, Psychology, Speech and Audio	56	78	1,081,322
Improvement of Instruction	63	93	1,474,530
Media Services (Library)	69	108	1,916,889
Board of Education Expense	21	35	688,114
Executive Administration	91	111	983,020
Building Level Administration	248	304	2,752,456
Operation of Plant	528	613	4,177,835
Pupil Transportation	134	203	3,391,419
Food Service	(4)	(24)	(983,020)
Business/Central Service	89	172	4,079,533
Totals	<u>\$1,415</u>	<u>\$1,832</u>	<u>\$20,495,967</u>

Table XVIII

Current County Cost per Pupil Applied to City Board EP

District	Current Cost/EP ^[*]	Cost	Difference	
St. Louis EP				
St. Louis	\$4,288	\$49,151	\$210,737,649	\$ 0
Clayton	7,439	49,151	365,634,287	(154,905,638)
Brentwood	5,660	49,151	278,194,660	(67,457,029)
Ladue	5,585	49,151	274,508,327	(63,770,678)
Maplewood	4,536	49,151	222,948,927	(12,211,278)
Valley Park	4,536	49,151	222,948,927	(12,211,278)
Affton	4,468	49,151	219,606,660	(8,869,011)
Pattonville	4,429	49,151	217,689,770	(6,952,121)
Webster Groves	4,205	49,151	206,679,950	4,057,699
Ferguson-				
Florissant	4,169	49,151	204,910,510	5,827,139
Kirkwood	4,147	49,151	203,829,190	6,908,459
University City	4,032	49,151	198,176,830	12,560,819
Lindbergh	3,977	49,151	195,473,520	15,264,129
Wellston	3,951	49,151	194,195,600	16,542,049
Parkway	3,911	49,151	192,229,560	18,508,089
Ritenour	3,767	49,151	185,151,810	25,585,839
Hazelwood	3,632	49,151	178,516,430	32,221,219
Mehlville	3,418	49,151	167,998,110	42,739,539
Bayless	3,403	49,151	167,260,850	43,476,799
Normandy	3,327	49,151	163,525,370	47,212,279
Rockwood	3,306	49,151	162,493,200	48,244,409
Riverview Gardens	3,297	49,151	162,050,840	48,686,809
Hancock Place	2,927	49,151	143,864,970	66,872,679
Jennings	2,879	49,151	141,505,720	69,231,929

Table XIX

Debt Service Expenditures, 1985-86

District	Debt Service Expenditures	Amount per EP
Affton	\$ 432,314	\$218
Bayless	0	0
Brentwood	166,465	213
Clayton	344,065	210
Ferguson-Florissant	3,223,840	302
Hancock Place	125,726	85

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District	Debt Service Expenditures	Amount per EP
Hazelwood	\$ 3,687,437	\$238
Jennings	333,795	145
Kirkwood	0	0
Ladue	535,574	180
Lindbergh	505,845	106
Maplewood	249,894	183
Mehlville	2,727,084	299
Normandy	709,558	115
Parkway	4,062,732	199
Pattonville	1,620,432	264
Ritenour	348,221	54
Riverview Gardens	857,156	196
Rockwood	4,241,349	394
University City	0	0
Valley Park	49,245	73
Webster Groves	1,009,761	286
Wellston	263,577	257
Special District	0	0
County	<u>\$25,494,070</u>	<u>\$200</u>
St. Louis	\$ 331,076	\$ 7

Table XX Gross Expenditures, 1985-86

		Four Largest County Districts		St. Louis	
EP	Classification	Amount	Per EP	Amount	Per EP
	Instructional Services				
	Special Education	\$ 15,071,983	\$ 263	\$ 16,943,236	\$ 345
	Vocational Instruction	4,542,079	79	8,596,289	175
	Student Activities	3,990,642	69	2,332,678	47
	Culturally Different	927,176	16	8,999,768	183
	Elementary, Middle and High				

School Instruction		117,080,617	2,040	87,272,014	1,776
Payments to Other Districts		370,823	6	536,359	11
Subtotal Instruction		\$141,983,320	2,473	\$124,680,344	\$ 2,537
Support Services					
Attendance		\$ 832,001	\$ 14	\$ 1,466,534	\$ 30
Guidance		6,026,537	105	5,500,904	112
Health, Psychology, Speech/					
Audio	3,006,708	52	3,886,392	79	1,327,077
Improvement of Instruction			3,291,870	57	4,597,579
Media Services (Library)			4,107,765	72	5,604,445
Board of Education			869,934	15	1,739,042
Executive Administration			4,360,756	76	5,490,624
Building Level Administration			14,565,379	254	15,016,089
Operation of Plant			31,178,933	543	31,071,270
Pupil Transportation			8,644,000	151	10,024,440
Food Services			7,379,169	129	12,368,544
Business/					
Central Services	6,966,662	121	8,890,379	181	2,949,060
Subtotal Support		\$ 91,229,714	\$1,589	\$105,656,242	\$ 2,150
Facility Acquisition and Construction		\$ 6,302,545	\$ 110	\$ 0	\$ 0
Debt Service					
Principal		9,140,000	159	0	0
Interest		6,801,150	118	331,076	7
Adult Basic Education		332,366	6	597,033	12
Adult Continuing Education		1,312,753	23	3,762,924	76
Community Services		490,084	9	3,482,730	71
Subtotal		\$ 24,378,898	\$ 425	\$ 8,173,763	\$ 166
Grand Total Expenditures		\$257,591,932	\$4,487	\$238,510,349	\$ 4,853

[*] "It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity. It was the season of Light, it was the season of Darkness. It was the spring of hope, it was the winter of despair. We had everything before us, we had nothing before us. We were all going direct to Heaven, we were all going direct the other way—in short, the period was so far like the present period that some of its noisiest authorities insisted on its being received, for good or for evil in the superlative degree of comparison only." A Tale of Two Cities, Page 1, Charles Dickens.

[1] "Thirty-four of the non-integrated black schools and 21 of the integrated schools are over 50 years old. Nearly one-fourth of the building area in the city schools is over 75 years old. Nearly one-half of the building area in the city schools is over 65 years old. More than two-thirds of the building area in the city schools is over 50 years old."

[2] "In the last 24 years, St. Louis voters have defeated 13 proposed bond issues. The only bond issue to pass during this period was in 1962 and approval came only after resubmission to the voters. Significantly, both of the

last two bond issues were approved by a simply majority; the constitutional requirement of two-thirds voter approval, however, blocked passage of these issues."

[3] Judge Meredith handled the case from its inception until 1980 when the case was assigned to Judge Hungate who handled it until January 31, 1985.

[4] The most recent *Liddell* decision by the Eighth Circuit (filed July 7, 1987 and hereinafter referred to as *Liddell XII*, 823 F.2d 1252) directs the City Board to "carefully consider closing the smaller, poorly maintained and poorly located nonintegrated elementary and middle schools and consolidating the students in either new or existing buildings that are well located and designed specifically to meet a pupil/teacher ratio of twenty to one, the goal being to achieve significant operating savings while providing the students with suitable facilities."

[5] All of Dr. Brown and Dr. Moody's statistical data related to the cohort survival method is contained in Attachment 1: Tables I-VII.

[6] Dr. Brown's calculations include an estimate of approximately 18,000 city students enrolled in non-integrated schools and approximately 12,000 magnet students. The recent *Liddell XII* decision speaks of 15,000 non-integrated students and 14,000 magnet students. A shift of 2,000 students minimizes the conflict between Dr. Brown's figures and *Liddell XII*. The Court believes that the remaining 1,000 students in non-integrated schools will in all probability be a lesser number. Despite the apparent discrepancy, the Court has determined that the effect of *Liddell XII* on Dr. Brown's enrollment projection is minimal and that the number of needed facilities remains constant.

[7] Although most school of emphasis programs already implemented do not utilize a separate classroom, and its concept does not really require the allocation of separate facilities, the Court has decided to allocate such space to encourage the implementation of this 12(c) program. In the event a particular school of emphasis program does not require a separate classroom, the classroom is available for other use.

[8] Details of Dr. Brown's capacity analysis are contained in Attachment 2.

[9] The Court will allow planning based upon pupil/teacher ratios in the integrated elementary, middle and all high schools, even though such pupil/teacher ratios are below AAA standards as required in *Liddell VII* and *IX*. *Liddell XII*, while acknowledging that these pupil/teacher ratios are lower-court mandated, does not require any action to change them; however, it directs that these pupil/teacher ratios shall no longer be reduced (at least not until a pupil/teacher ratio of 20/1 is met in the nonintegrated elementary and middle schools). This Court concurs and advises parties that facilities planning will not account for pupil/teacher ratios lower than 26/1 in the integrated elementary and middle schools and 28/1 in the regular high schools.

[10] Details are provided in Attachment 3.

[11] The details of this cost analysis are provided in Attachment 4. Attachment 5 provides the details of the cost for additional classrooms and gymnasiums.

[12] A capital improvements program for the 12(c) magnets will be developed separately pursuant to *Liddell VIII*.

[13] 1985-86 City Board fiscal data and expenditure patterns of the City Board and the county school districts are outlined in Attachments 6 and 7.

[14] The basis for this ruling shall be discussed later in this opinion.

[*] Estimated

[*] Estimated

[*] Estimated

[*] Estimated

[*] Includes 10 Home Economics and 10 Industrial Arts rooms

[**] Includes 14 Home Economics and 14 Industrial Arts rooms

[*] Rooms contributing to building capacity

[**] Divided to provide 40 small classrooms

[*] Rooms contributing to building capacity

[**] Divided to provide 34 small classrooms

[*] Divided to provide 104 small classrooms

[*] Reported as two buildings in L(852)86, pages 61-62

[**] Divided to provide 112 small classrooms

[*] Includes M & M Receipts and Surcharge Tax Receipts

[**] State Assessed

[*] \$437 added to each county district as prorata share of Special District costs.

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