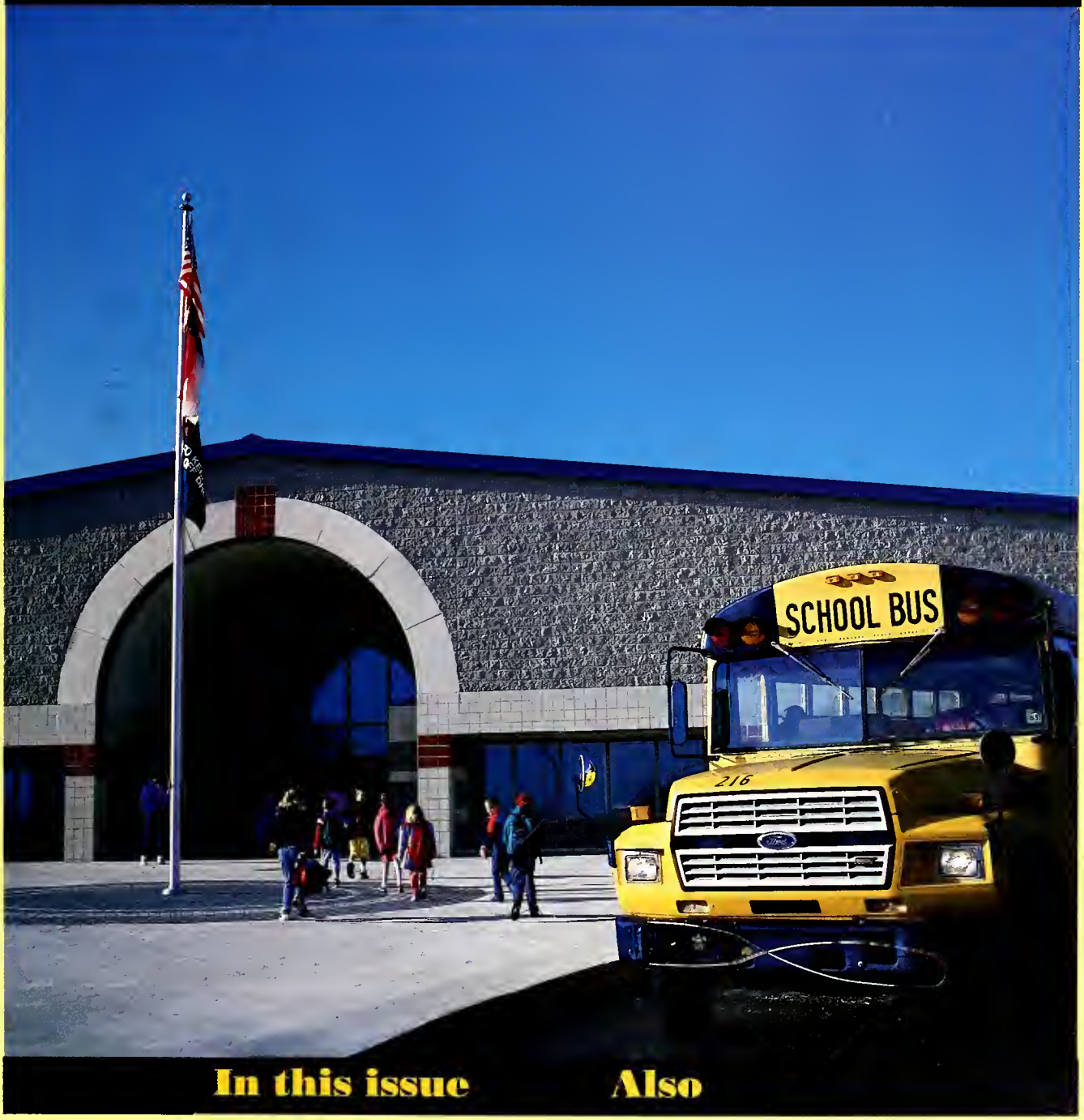
Fall 1992 Volume 58, Number 2

Popular Government

Institute of Government • The University of North Carolina at Chapel Hill



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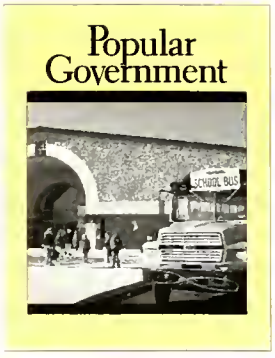

Popular Government (ISSN 0032-4515) is published four times a year (summer, fall, winter, spring) by the Institute of Government, CB# 3330 Knapp Building, UNC-CH, Chapel Hill, NC 27599-3330. Subscription: $12.00 per year. Second-class postage paid at Chapel Hill, NC, and additional mailing offices. POSTMASTER: Please send change of address to Institute of Government, CB# 3330 Knapp Building, UNC-CH, Chapel Hill, NC 27599-3330. ♾ This publication is printed on permanent, acid-free paper in compliance with the North Carolina General Statutes. Printed in the United States of America.

Popular Government is distributed without charge to city and county officials as one of the services provided by the Institute of Government in consideration of membership dues. The Institute of Government of The University of North Carolina at Chapel Hill has printed a total of 7,900 copies of this public document at a cost of $9,313.05, or $1.18 per copy. These figures include only the direct cost of reproduction. They do not include preparation, handling, or distribution costs.

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On the cover Students start the day at Morrisville Elementary School in Wake County—one of sixteen year-round school programs in North Carolina. Photograph by Bob Donnan.


Dining
Activity
Grades 2-

"The One Thing You've Got to Have Is Air Conditioning": Year-Round Schools in North Carolina

Terry Roberts and Patricia Weiss

When Robert Wentz became Wake County superintendent of schools in 1989, one of the major problems he faced was a growing school population. By the 1991–92 school year, Wake County's enrollment had grown by 7 percent, to 66,915, and Wentz and others who saw the implications of this trend predicted that Wake County would be serving from 91,000 to as many as 105,000 students by the year 2000, a possible increase of up to 56 percent in eight years.[1]

The answer formulated under Wentz's leadership was the year-round, multi-track school, which he argues can consistently serve up to 33 percent more students. During the 1991–92 school year Wake County had one elementary school on a year-round, four-track calendar; for 1992–93 they have expanded to three elementary schools and one middle school. According to Wake County administrators, Wake County could save nearly $390 million over the next eight years by evolving into a mandatory year-round, multi-track system. In addition, the quality of education should increase. Wentz and other Wake County administrators argue that children learn more efficiently on a calendar that doesn't break for three months every year.

As of the 1992–93 school year, there were sixteen districts with year-round school programs in operation in North Carolina and hundreds throughout the United States. This article describes how year-round programs work and discusses the experiences of five programs in operation in North Carolina. It concludes with a discussion of the success and problems of year-round education and its prospects for the future.

Terry Roberts is an assistant program director with the Institute of Government's Principals' Executive Program. Patricia Weiss is director of the National Paideia Group, Inc. The photograph shows the interior of Morrisville Elementary School, a year-round school in Wake County. All photos by Bob Donnan.

The Year-Round School Phenomenon

The traditional school calendar is based on an agrarian schedule. Prior to World War II, the majority of American children were needed at home during the summer months to help on the family farm. This is obviously no longer the case, and the proponents of a year-round school calendar explain that it is a natural scheduling reform and nothing more. They do believe, however, that the flexibility it provides should lead to curriculum innovation as well. A variety of models are in operation across the country that utilize calendar formats different from the traditional agrarian schedule. Vacations and breaks occur at intervals that allow for the use of the school building throughout the year.

Year-round scheduling of this sort is not a new concept. Nontraditional school calendars were in operation in the last century, but until the 1960s and '70s there were relatively few examples, and year-round schools are still rare east of the Mississippi River. In the last few years, however, the growing clamor to make American students more competitive in the international marketplace combined with growing school populations has created national interest in calendar reform.

Although there are more than a dozen year-round calendar concepts and organizational patterns, they are best understood in two categories: single-track and multi-track.

Continued on page 6

Figure 1
Morrisville Elementary School's 1991–92 Year-Round Calendar (45–15 Multi-Track Schedule)

			September		
12 13 14 15 16	19 20 21 22 23	26 27 28 29 30	2 3 4 5 6	9 10 11 12 13	16 17 18 19 20
November			December		
4 5 6 7 8	11 12 13 14 15	18 19 20 21 22	25 26 27 28 29	2 3 4 5 6	9 10 11 12 13
	February				March
27 28 29 30 31	3 4 5 6 7	10 11 12 13 14	17 18 19 20 21	24 25 26 27 28	2 3 4 5 6
	May				
20 21 22 23 24	27 28 29 30 1	4 5 6 7 8	11 12 13 14 15	18 19 20 21 22	25 26 27 28 29

Legend

- Track 1
- Track 2
- Track 3
- Track 4
- School day
- Non-school workday
- Holiday
- Snow make-up day
- Protected workday
- Intersession day (in lieu of summer school)

When only one group of students is involved and the instructional year is spread out over the entire calendar year, educators refer to the result as single-track. When several groups of students utilize the same space at different times by staggering schedules across the calendar year, educators refer to the result as multi-track.

Single-Track Year-Round

The single-track year-round plan is the scheduling of one group of students into nontraditional blocks of time for instruction and vacation spread out across the year. An example is the 45–15 single-track plan favored by most North Carolina year-round programs.

In the 45–15 single-track plan, the year is divided into four nine-week terms separated by four three-week vacations called intersessions. In other words, students and teachers attend school for forty-five days and then take a fifteen-day vacation. Students still attend school for thirty-six weeks (as they do with the traditional calendar), but the 180-day school year is spread out over the entire calendar.

Variations on this plan include the 60–20 plan made up of three sixty-day terms divided by four-week vacations, the 60–15 plan, the 90–30 plan, and the trimester plan—all different blockings of instructional days and vacation time. There are also options, such as the quarter plan, where all students attend only three of the quarters and the fourth is optional. Many schools and colleges use this format with summer school as the optional quarter.

Multi-Track Year-Round

Multi-track scheduling involves several groups of students attending school year round on a rotating basis. Students in at least one track are on intersession (or vacation) while students in the other tracks are attending class. This format is primarily in use where student population has outgrown available classroom space. Teachers may follow their students' schedules or teach additional time with other tracks. Under this plan some teachers, such as physical education, media, and language arts specialists, work a twelve-month schedule.

Year-Round Schools in North Carolina

As mentioned earlier, there are currently sixteen year-round programs in operation in North Carolina, and a number of other systems are considering similar programs. Most of the programs in North Carolina are voluntary within the system, and all except one offer single-track schools. Of these, eleven were new as of the 1992–93 school year. The five systems that have been in operation the longest are described below.

Wake County

Of the year-round programs currently in operation in North Carolina, the Wake County initiative is the oldest and the only year-round program on a multi-track calendar. Principal Caroline Massengill has guided the program from its start as a single-track experiment at the old Kingswood Elementary School into a new facility on Morrisville Parkway with a four-track schedule. In many ways Morrisville Elementary School represents one of the most sophisticated of the year-round programs in North Carolina. The multi-track calendar on which it operates (see Figure 1), the transportation system that feeds the school from several Wake County districts, and the marriage of architecture to programming on several new campuses are all unique aspects of the Wake County program. For the 1992–93 school year Wake County has put in place a network of three elementary schools (including Morrisville) and one middle school, West Lake Middle School under principal Ramey Beavers. These schools are at their first-year capacities and had to turn numerous applicants away. Despite Wake County's population problems, Principal Massengill maintains tenaciously that she would never have become involved in the year-round program if she wasn't convinced that it created a better educational environment for children. "Both teachers and students are more focused, and instructional time is more productive," she argues, "because breaks come at just the right time."

Wake County experienced concerted resistance in the summer of 1992 when—for financial reasons—Wentz and several school board members expressed an interest in making year-round programs mandatory for all Wake County students. Since then, year-round proponents have come to understand that while there is probably sufficient support in Wake County for a system-wide network of year-round programs through grade 12, making the schedule mandatory is not politically feasible at this time.

Greensboro

Massengill's argument—that a year-round calendar that provides shorter breaks spread throughout the year makes more educational sense—was also a driving force in the development of other North Carolina programs.

In Greensboro, for example, Principal Phil Mobley heads the Global Magnet School, a K through 3 year-round elementary school that draws students from all over Greensboro. The unique element to the Greensboro plan is that all students at the Global Magnet School attend a mandated 210 days a year, thirty more than the 180-day North Carolina standard. The Global Magnet School was designed to begin small (eighty students in 1991–92) and grow consistently, serving 310 students in grades K through 5 by 1993–94. Greensboro administrators have observed strict racial guidelines in filling openings, admitting equal numbers of blacks and whites from an abundant applicant pool, and thus far the program has been an extremely popular one.

Mobley's school is unique among year-round programs in that it is part of a thriving magnet-school network administered by the Greensboro school system. Because the school developed out of this climate that already stressed innovative options, its unique nature was not as threatening to the community. The Global Magnet has been joined by a second year-round program in Greensboro this year, Hampton Elementary, serving 390 students. It remains to be seen if Greensboro's pending merger with the Guilford County school system will threaten these and other magnet programs.

Administration

Principal Caroline Massengill (second from right) talks with Morrisville Elementary School staff members in the school's administrative office.

Mooresville

Perhaps the best-known year-round program in North Carolina is in Mooresville, a small separate city unit in Iredell County. Recipients of an RJR Nabisco "Next Centuries Schools" grant for their innovative design, Mooresville offered a single-track year-round program at Park View Optional School (K through 3) in 1990–91 and expanded to N. F. Woods Elementary School (K through 5) and the sixth grade at Mooresville Junior High in 1991–92. This allowed Park View students to continue being served as they matriculated and simultaneously brought more students into the program.

Park View Optional Principal Carol Carroll, Director of Instruction Jane Carrigan, and Superintendent Sam Houston have used part of the RJR Nabisco grant to enhance offerings in the Mooresville intersessions, the four three-week breaks spread throughout the school year. They agree with many other proponents that intersession offerings—enrichment as well as remediation—are the instructional key to year-round success. At Mooresville experts have been employed to teach Wellness and Outward Bound, arts, environmental education, geography and world cultures, fitness, and technology to multi-aged groups of children. As in the state's other year-round programs, participation in the Mooresville year-round calendar is strictly voluntary, and early success has led to increased applications from the community.

For the 1992–93 school year, the innovative Mooresville team has gone on to serve as one of several statewide pilot programs for Outcomes-Based Education, a success-oriented plan that they feel fits perfectly into the year-round calendar's pattern of intense sessions followed by remediation and enrichment in intersessions. In outcomes-based programs, students do not leave a unit in any subject until they have demonstrated mastery of the skills represented there. With this plan, students can progress at different rates, and teachers can use year-round intersessions to individualize student learning.

Pros

Burn-out for teachers and students is reduced

Teacher planning is more efficient

Review is reduced so more content can be covered

Usual legal and religious holidays are still available

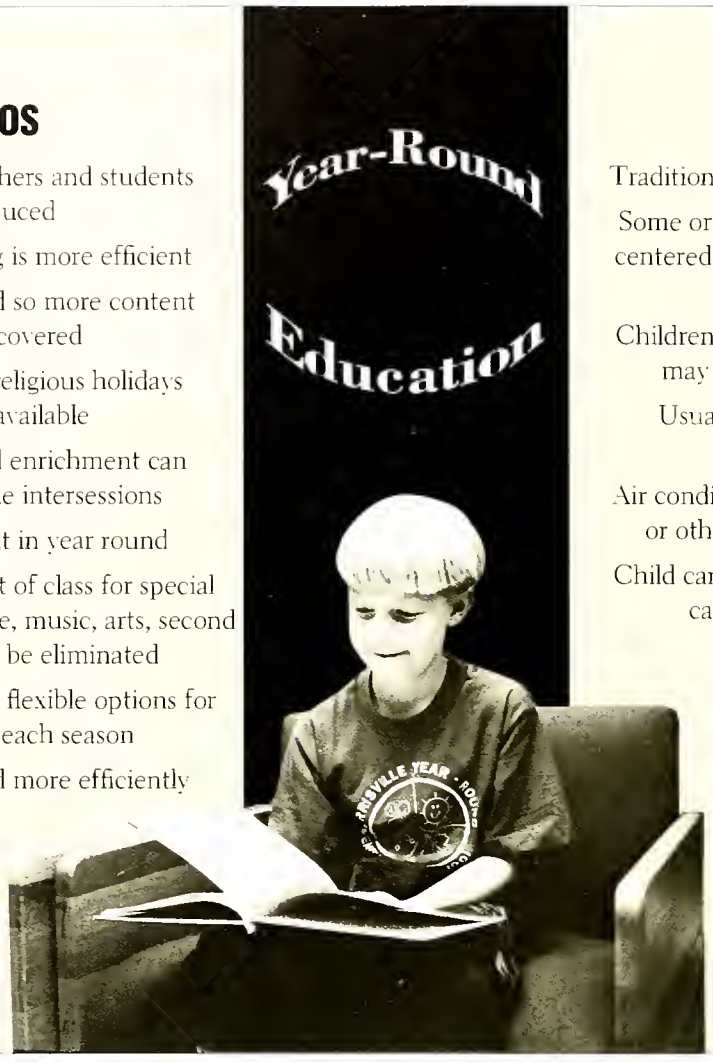
Remediation and enrichment can be built into the intersessions

Day care is built in year round

Pulling students out of class for special programs (for example, music, arts, second languages) can be eliminated

Families have more flexible options for vacations in each season

Facilities are used more efficiently



Cons

Traditional summer break is eliminated

Some organized recreational activities centered around only summer months may be eliminated

Children in same family or peer group may be on different schedules

Usual habits and lifestyles may be disrupted

Air conditioning may have to be added or other structural changes made

Child care for weeks off or after-school care may be harder to find

More money is needed to pay year-round salaries

Additional personnel may be required

Transportation costs may increase

Morrisville fourth grader Robert Schueller

Mooresville's successes have been dramatic, but it is best to remember, as critics have occasionally pointed out, that many of their more creative intersession programs have been seeded by a wealth of grant funding that is not available to other systems.

Hendersonville

In Hendersonville Superintendent Charles Byrd and Director of Instruction Mary Margaret Ingle led the year-round initiative through a successful first year at Bruce Drysdale Elementary School (K through 3) and Hendersonville Middle School (4 through 6) in 1991–92. In Hendersonville, as in Mooresville, both teachers and parents have been generally pleased because the shorter breaks have meant that there is less need for review time at the beginning of the term, remediation can take place at regular intervals spread throughout the year, and good intersession programs are available to children whose families cannot afford day care. Although the Hendersonville program is already growing quickly, it may change dramatically because the Hendersonville school system, like that in Greensboro, is scheduled to merge with the county system over the next few years. According to Bruce Drysdale Principal Noland Ramsey, however, the merger should only serve to expand an already successful year-round program.

Watauga County

The fifth year-round program that was in operation in North Carolina during the 1991–92 school year is located in Watauga County at Blowing Rock Elementary School under the direction of Principal Joyce Alexander. The relatively thinly populated Watauga County uses a K through 8 design, and Blowing Rock Elementary has a year-round "school within a school" that serves approximately 170 children aged five through thirteen. Because

of this, the Blowing Rock year-round program had to untangle a complex middle school schedule in the very first year of operation.

Alexander emphasizes how, by creative scheduling, she and her faculty were able to operate two separate schedules at both the elementary and middle school levels without a substantial budget increase. Alexander and Superintendent David Greene have faced opposition from some Watauga parents who feel that students on traditional calendars have had to make do with less because resources were fed into the year-round program. Recently a school-community task force was created to address this and other community concerns about the new program.

Evaluation

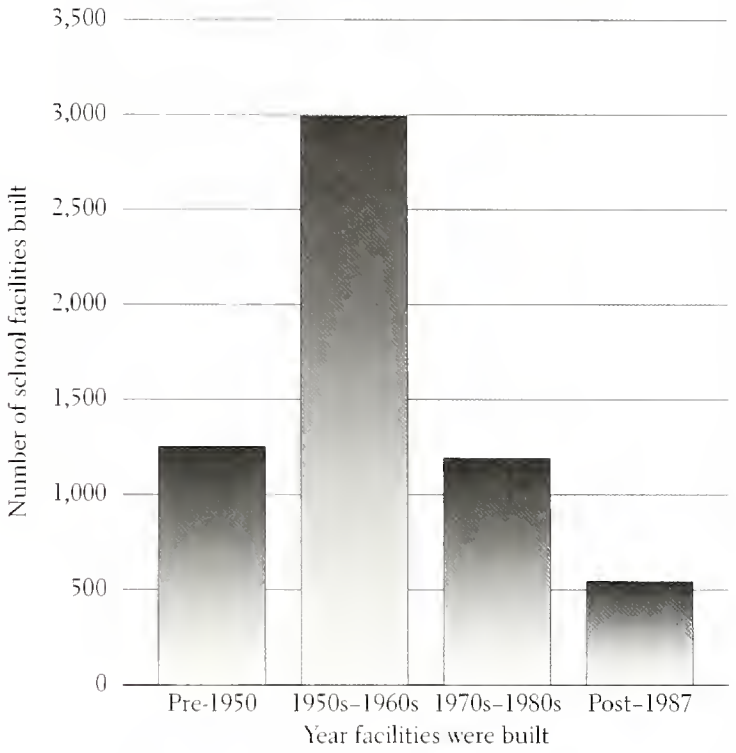
Proponents of year-round calendars sometimes jokingly reply to their critics that "the only thing you *have* to have is air conditioning. Everything else is already there." Unfortunately, this is not always the case, but creative efforts like those at Blowing Rock Elementary can minimize extra costs.

The use of year-round programs to deal with growth in student population has clearly been successful. Where there are too many students for space available, multi-track, year-round schools do seem to utilize school space and staff more efficiently. When the choice is between building a new school and making multi-track use out of existing space, the financial benefits of year-round schooling are clear, even in units where air-conditioning has to be installed. Statewide school populations have been growing in the last few years, and many predict that this growth will continue. In the meantime, the only segment of the adult voting population that mirrors that growth—the older population—is the segment least likely to support building new schools. To compound the problem, more than two thirds of North Carolina school buildings currently in use were built prior to 1970 and will wear out just as the population is growing (see Figure 2).

Of course, not all school systems are growing, and it's not clear to what extent those that are growing will continue to grow in the future.[2] But for the many school systems that need to deal with the problem of population growth, using year-round school programs is clearly one answer.

In terms of the quality of education, evaluations of the impact of national year-round programs have not, as yet, painted a universally clear picture. According to the studies summarized in the 1990 Phi Delta Kappan "Hot Topics" volume *Year-Round Schools: Do They Make a Difference?*, evaluation results are mixed and uneven.

Figure 2
Age of North Carolina Public School Facilities



Source: North Carolina General Assembly, Fiscal Research Division.

Flexible scheduling change involves many dimensions of a student's life in school, and as a result it cannot be evaluated as a single variable. Learning results are unclear due to the variety of plans, different school profiles, lack of information about curriculum, differences in instructional staff, and implementation factors that vary from school to school. It is not possible at this time to generalize about learning results that will hold true for all grades, sites, and student-ability levels.

Another difficulty in interpreting the data currently available is that many programs begin and operate on a volunteer basis, so that parents and teachers opting for the plan are choosing to adjust their schedules accordingly and have an investment in seeing the program succeed. Where year-round schedules become mandatory, as was discussed in Wake County, parent and teacher support could evaporate.

Because schooling involves both quantity and quality of time, making a judgment based on schedule alone is insufficient. Missing in the research currently available is any concrete indication that the use of instructional time has been generally improved by scheduling innovation. However, there are many theories about the use of

Judy Topkins's fourth-grade class at Morrisville Elementary School.

regular intersessions for remediation and enrichment that suggest that year-round schedules have created untapped resources of instructional time for all students. In fact, the ultimate measure of how year-round schedules impact on learning may well depend on how innovatively schools use their intersessions.

While data on the educational benefits of year-round programs are unclear, no study has shown that students learn less on a year-round than on a traditional schedule. This fact alone is encouraging to those who advocate the other benefits of year-round schools. Increases in learning may become more apparent when systems more fully tap the resources provided by regular intersessions.

Overall, administrators of North Carolina's year-round schools feel that the programs have been quite successful thus far, even where they have faced concerted opposition like that in Watauga County. Typically smaller, less wealthy school units have had to begin the year-round experiment with a school within a school, a year-round operation located on the same campus with a traditional operation, sometimes, as in Mooresville, with two separate principals. Administrators of year-round programs unanimously warn colleagues who are planning similar initiatives to take great care to prevent jealousy between the parents and teachers involved in the two programs.

Other problems may also face those planning year-round programs. For instance, the traditional summer break is shorter for all concerned, which affects second jobs and recreational activities for teachers and students. Long-term, daytime summer school cannot be scheduled for the same reason. From the family's point of view, siblings can have different school schedules and traditional family lifestyles can be disrupted. In addition, educators generally agree that a year-round calendar is relatively easy to administer at the elementary school level but progressively more difficult at the middle and high school levels where course variety and athletics complicate scheduling.

Despite the problems associated with year-round school programs, the success of many programs in North Carolina and throughout the United States indicates that the number of year-round schools most likely will continue to grow into the next century. For parents and educators who are considering year-round programs, it is generally agreed that they work best where school systems are able to offer a choice between year-round and traditional calendars, where systems can afford single-track rather that multi-track programs, and where school people are careful to recruit the support of the community. Just as intersession use may well be the key to the academic success of year-round programs, their long term feasibility probably depends on something as old-fashioned as school-community partnership. ❖

Notes

1. Wentz argues that Wake County will likely serve 105,000 students by the year 2000. Personal letter to Terry Roberts, April 15, 1992. Wentz's critics claim his predictions are inflated, but even more conservative estimates (the Department of Public Instruction projects 91,000 students in Wake County by the year 2000) still paint a grim picture.

2. See Charles D. Liner, "Update: School Enrollment Increases," *School Law Bulletin* 23 (Winter 1992): 8–12.

North Carolina's Prison Population Cap: How Has It Affected Prisons and Crime Rates?

Stevens H. Clarke

During the 1980s, North Carolina adopted legislation to limit the growth of its prison population. The recurrent spectacle of the Parole Commission struggling to keep the number of prisoners below the limit has led to fear that crime may have increased because dangerous offenders are being released too quickly. This article first looks at how the legislation has affected the prison population and then considers whether it has increased crime.

The Cap and Related Legislation

In 1987, pursuant to a settlement of lawsuits over alleged unconstitutional crowding of its state prisons, North Carolina adopted legislation that set a "cap" (limit) on the number of prisoners.[1] The legislation provides that when the population reaches 98 percent of the cap for fifteen consecutive days, enough prisoners legally eligible for parole must be paroled so that the population is reduced to 97 percent of the cap within sixty days. The cap was originally set at 17,460 but gradually has been raised as new prison facilities were built, reaching 20,900 by fall 1992.[2]

The 1987 cap legislation was not the only measure passed in the 1980s that was intended to slow the growth of the prison population. In 1983 and 1987 legislation was enacted that shortened somewhat the parole eligibility period of some felons when prison crowding became unmanageable.[3] The 1984 legislative session saw the establishment of community service parole, which allows many offenders to be released early in exchange for performing community service.[4] Both these measures reversed policies that had recently been changed. They restored to the Parole Commission some of its former power that it had lost under the 1981 Fair Sentencing Act, which (among other things) had drastically curtailed discretion to parole felons. A third measure enacted in 1989 allowed the parole of misdemeanants (except drunken drivers) at any time after they entered prison.[5] The Parole Commission also continued to use its authority to parole misdemeanants and to parole felons sentenced before the Fair Sentencing Act, which the act had left unchanged.

What Effect Have the Cap and Related Legislation Had on Prisons?

The cap evidently put the brakes on North Carolina's state prison population. After 1984, despite accelerating increases in admissions and arrests, and despite having increased for ten of the previous fourteen years, the average prison population remained nearly constant through 1989.[6] From 1989 to 1991, however, as more prison space became available and the cap was increased, and as arrests and admissions continued to increase, the average prison population began to increase again—in fact, it increased even faster than it had between 1980 and 1985. Whether it will continue to increase seems to depend on the General Assembly's willingness to build and operate more prison space (and find the money to pay for it).

The virtual halt to North Carolina's prison population growth from 1985 to 1989 was in sharp contrast to what happened in most other states. A recent Bureau of Justice

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Statistics report indicates that from 1984 to 1990, North Carolina's average daily state prison population was the fourth slowest-growing in the nation, increasing only 10.8 percent (from 16,295 in 1984 to 18,062 in 1990).[7] This growth rate was considerably less than the overall 1984–1990 increase in average prison population in the South[8] (39.6 percent) and the nation (62.9 percent, not counting the federal prisons). Without the cap, some analysts estimate that North Carolina's prison population would have reached 24,800 by November, 1990 (instead of its actual level of about 18,500), and 32,400 by mid-1993.[9]

In relation to its resident population, North Carolina's prison population also behaved differently from that of most other states. From 1984 to 1991, the period of chief interest in this article, North Carolina's incarceration rate, measured as prisoners sentenced to more than one year per 100,000 residents, grew by 9.8 percent (from 246 to 270). In comparison, the incarceration rate for the entire South grew by 43.7 percent (from 231 to 332), and the rate for the nation (including only state prisons) grew by 63.1 percent (from 176 to 287).[10]

This information may be surprising to those who remember the 1970s, when North Carolina had one of the highest and fastest-growing per capita incarceration rates in the country. From 1970 to 1982, according to Department of Correction data, North Carolina's average number of state prisoners per 100,000 state residents rose 45 percent (from 192 to 279). But later in the 1980s, this state's prison growth slowed sharply and other states' began to catch up. The result was that by 1991, North Carolina's incarceration rate dropped to twenty-third place among all states and the District of Columbia.[11] It should be noted, though, that North Carolina's incarceration rate in 1991 was still much higher than it was in the 1970s.

The slowing of North Carolina's prison population growth occurred despite a hefty increase in admissions. From 1984 to 1991, annual admissions to North Carolina prisons rose by 92.4 percent (from 14,828 to 28,536) largely due to increases in arrests, continuing a trend in effect since 1978.[12]

Given this increase in admissions, how did the cap and related measures operate to control the prison population? *The key to the slowed growth of North Carolina's prison population evidently was a modest reduction of the average time inmates served.* From 1984 to 1991, misdemeanants'[13] average time served before first release decreased by 3.2 months (from 5.1 months for those released in 1984 to 1.9 months for those released in 1991).[14] While the number of months of reduction was small for misdemeanants, the *proportional* decrease in overall time served was large (63 percent), which helps to explain why the number of misdemeanants in prison dropped over the period from 3,101 to 1,483 despite increased admissions.[15]

For felons, the average time served increased from 22.9 months for those released in 1984 to 25.2 for those released in 1987 (the year the cap was enacted) and then declined to 18.7 for those released in 1991. Thus the decline in felons' time started later than the decline in misdemeanants' time. To gauge the decrease in felons' time served during the 1984–1991 period, because it did not steadily decrease, the average months served by those released in 1991 (18.7) can be compared with the average over the four years immediately preceding the cap (1984–1987), which is about 23.7. This yields a post-cap decrease of 5.0 months for felons, or about 21 percent of the pre-cap level—a much smaller percentage decrease than misdemeanants experienced. The number of felons in prison at year's end increased from 13,234 in 1984 to 17,354 in 1991; the reduction in time served was not enough to counter the increase in felon admissions during the period.

The changes from 1984 to 1991 in prison time served by felons were a product of varying trends depending on the seriousness of the offense, the average sentence imposed by courts, and the percentage of sentences served before release. The average time served actually increased for some of the more serious felonies, while it decreased for less serious felonies.[16] The average percentage of felons' sentences (court-imposed prison terms) that they actually served before first release from prison dropped from 42.0 percent in 1984 to 24.2 percent in 1991, but this change was partially offset by an increase in the average sentence imposed (from 65.2 months to 83.3 months).

Have the Prison Cap and Related Legislation Increased Crime?

The prison cap and related legislation, which have slowed prison population growth in North Carolina, have led to concern that crime has increased because offenders are being released sooner. The question of whether the cap has increased crime is not easily answered. The causes of crime are so complex that it is hard to separate the contribution of one factor from other factors that may affect crime and the reporting of crime. These other factors include, for example, improvements in law enforcement and crime investigation, changes in victims' willingness to report crime, and changes in social and economic conditions.

Method of Analysis

The approach taken here is first to look at published data on per capita crime rates to see whether North Carolina experienced an increase in crime from the mid-1980s to 1991 that was greater than that of other states, particularly other states in the South, and then to consider whether any differential changes could be attributable to the time-shortening effects of the cap.[17] The published crime rates only include crime that is reported to and by police.

North Carolina is not the only state with limits imposed on its prison population. According to a 1991 survey by North Carolina's attorney general, five other southern states besides North Carolina and eight states outside the South were subject to limits on their prison populations because of court orders or consent decrees; most of these limits were accompanied by standards of minimum space per inmate.[18] In 1990 about 22 percent of the 1,207 state correctional facilities in the United States were ordered to limit their population either by consent decree (like North Carolina) or by court order.[19] However, the limits imposed in other states generally have not been nearly as effective as North Carolina's legislatively imposed limit; this is clear from the preceding comparison of prison population growth. Thus a comparison of North Carolina to other states is not a comparison of a state with a prison population cap to states without such caps. Rather, it is a comparison of a state that, because of its legislated cap, had very low prison population growth in the late 1980s to other states that, despite whatever controls on prison populations they may have had during this period, generally experienced much faster prison population growth than North Carolina did.

The period of special interest here is 1984 to 1991, during and after the enactment of the cap and related legislative measures such as community service parole; this is referred to here as the *cap period*. To put this period in perspective, crime data from 1970 to 1991 is examined. Examining trends over twenty-one years helps to show whether North Carolina crime rates continued to follow their previous patterns during the cap period, or took a new course.

In comparing changes in North Carolina's crime rates with those of the rest of the South and the rest of the country, *the change in the number of crimes per 100,000 residents is examined, rather than the percentage change.* The best measure of the danger of criminal victimization provided by the available data is the number of crimes per 100,000 residents, and the best measure of increased (or reduced) danger is the change in the number of crimes per 100,000. Percentage change can be quite misleading; for example, if the crime rate is low, even a small increase may amount to a large percentage without a substantial increase in the danger of victimization. Another reason for using changes in the number of crimes per 100,000 residents is that (as will be shown) North Carolina's crime rates since 1970 generally have followed a pattern of remaining below those of the rest of the South but moving in a parallel direction, staying about the same amount below the South's rates. If from one year to the next North Carolina's rate and the South's rate both increase (or decrease) by the same number of crimes per 100,000 residents, the *percentage* increase (or decrease) will be greater for North Carolina because North Carolina's rate starts from a lower point, but the established pattern of parallel movement will not have changed.

This analysis uses published data from the Federal Bureau of Investigation's Uniform Crime Reports (UCR) system to compare changes in North Carolina with those of the rest of the South and the nation. The article is limited to published data, which at the time of writing was available through 1991.

The UCR system is based on reports of crime by victims and others to local police and on reports of police to state law-enforcement agencies (like North Carolina's State Bureau of Investigation) and the Federal Bureau of Investigation. There is good reason to believe that the UCR system substantially understates actual crime rates and distorts their trends.[20] However, there is no reason why the distortions in the UCR data would not be approximately the same in North Carolina as in the rest of the South, especially as the trends in UCR crime rates have been so similar (as will be shown).

The graphs accompanying this article describe the per capita crime rates in North Carolina, the South, and the nation as a whole, as shown in published reports of the UCR system.[21] Thus the article looks at the growth in UCR-reported crime in relation to the resident populations of the areas considered. The population data for intercensal years are the Census Bureau's most recent estimates[22] rather than those in the annual UCR (although using the earlier estimates published in the UCR would have made little difference). In this article, *the crime data for the South exclude North Carolina; the crime data for the nation exclude North Carolina but include the rest of the South.*

Results of Crime Trend Comparison

Violent index crime. Violent index crime includes murder,[23] rape, robbery, and aggravated assault.[24] Figure

Figure 1
Violent Index Crime Rate

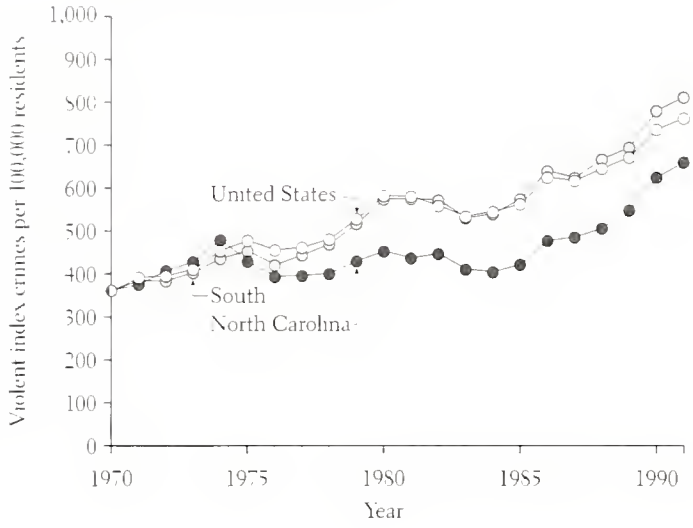
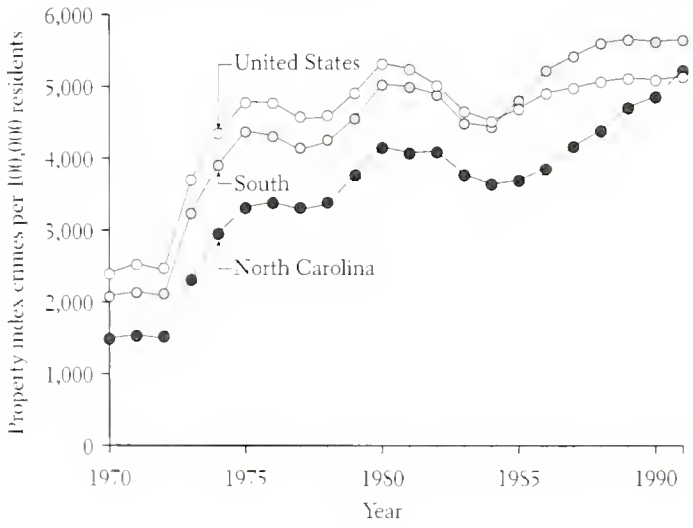


Figure 2
Property Index Crime Rate



1 compares the 1970–1991 trends in violent index crimes per 100,000 residents for North Carolina, the South, and the nation. It can be seen that in the late 1970s, North Carolina's violent index crime rate dropped below the levels of the southern and national rates (which were nearly the same), and has stayed well below those levels ever since. From 1980 to 1991, the trend[25] in North Carolina's rate was approximately parallel to the other two trend lines. North Carolina's rate remained nearly the same amount below the South's rate (an average of 142 crimes per 100,000 residents) and the national rate (an average of 128 crimes per 100,000).

From 1984 to 1991—the period during and after the enactment of the prison population cap—North Carolina's violent index crime rate increased annually by an average of 36.4 crimes per 100,000 residents, and the rest of the South's rate increased by 38.7 crimes per 100,000 residents, slightly faster than North Carolina's.[26] Meanwhile, the national rate increased slower than the other two rates—by an average of 31.0 crimes per 100,000.

Property index crime. Property index crime includes burglary, larceny, and motor vehicle theft. Figure 2 shows that from 1970 until 1987, the trend in North Carolina's property index crime rate per 100,000 residents remained approximately parallel to the rate for the rest of the South, and well below the South's rate. From 1984 to 1987, North Carolina's property index crime rate increased by 176.9 crimes annually—much slower than the South's rate increased (327.9 crimes annually). But from 1987 to 1991, after passage of the cap, North Carolina's property index crime rate continued to increase, growing at 264.8 crimes per 100,000 residents per year, while the growth of the South's rate and the national rate almost ceased.[27] By 1991 North Carolina's rate (5,230.3 property crimes per 100,000) slightly exceeded the national rate (5,137.2), although it still remained below the South's rate (5,651.1). It probably is too soon to be sure whether the 1987–1991 period shows the beginning of a new pattern for North Carolina's property crime rate, or whether it will return to the old pattern.

Rates of specific crimes. The preceding paragraphs have dealt with two categories of index crime—violent and property. This article now looks at the specific types of crimes included within these broader categories: murder, rape, robbery, aggravated assault, burglary, larceny, and motor vehicle theft.

Murder. As shown in Figure 3, from 1970 to 1991 murder rates per 100,000 residents for the South and the nation fluctuated but remained approximately parallel to each other, with the South's rate remaining substantially greater. The *linear* (straight-line) trend (which is not included in the figure) actually is flat for the nation's murder rate and declines slightly for the South and for North Carolina.

In the 1970s North Carolina's murder rate first followed the South's rate but later dropped below it, remaining approximately at the (lower) level of the national rate in most of the 1980s. After 1986 it declined slightly until 1988, but thereafter jumped upward, going from 7.9 per 100,000 residents in 1988 to 11.4 in 1991, an increase averaging 1.2 crimes per year per 100,000 residents; nevertheless, it still remained below the rate for the rest of

Figure 3
Homicide (Murder and Nonnegligent Manslaughter) Rate

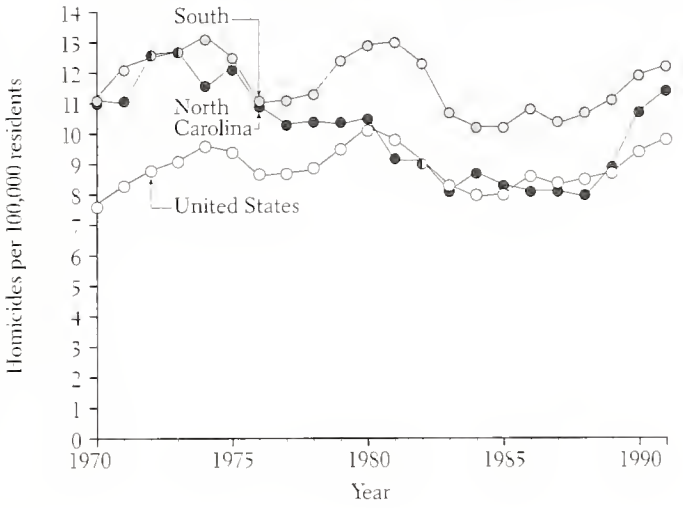


Figure 5
Robbery Rate

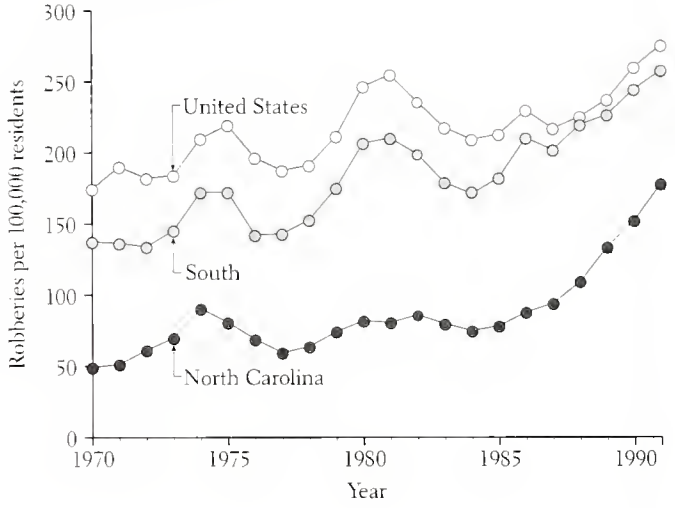


Figure 4
Rape Rate

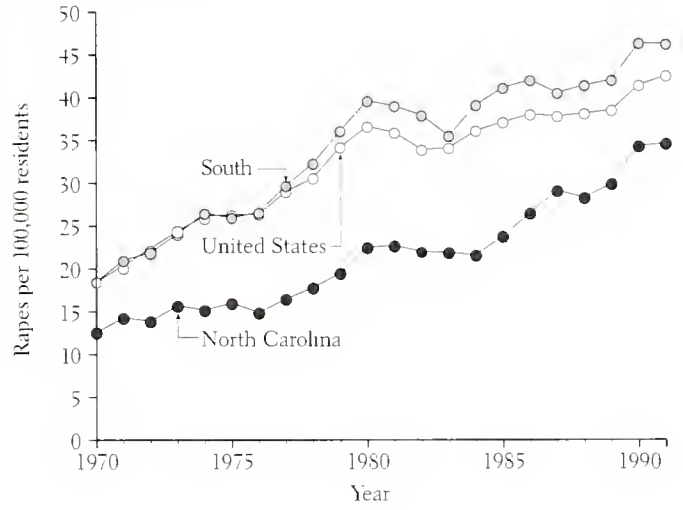
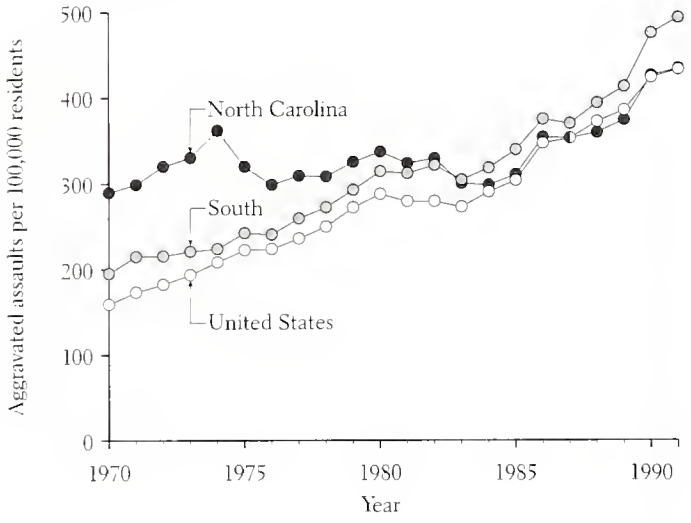


Figure 6
Aggravated Assault Rate



the South. The South and the nation also experienced a murder rate increase from 1988 to 1991, but not nearly as rapid as North Carolina's.[25]

The 1988–1991 data on North Carolina's murder rate are cause for concern, especially if the upward surge continues in later years. On the other hand, North Carolina's murder rate (like the other two rates) has fluctuated in the past, and the straight-line long-term trend is down, so perhaps this recent increase will be only temporary. It is interesting to note that despite the recent increase, North Carolina's murder rate in 1991 (11.4) was still less than it was from 1972 to 1975, when it varied from 11.5 to 12.7.

Rape. From 1970 to 1991, as shown in Figure 4, the rate of rape in North Carolina increased, but remained well below the rates of the South and the nation (the latter two rates remained nearly equal). Since 1980 North Carolina's rate has generally followed the movements of the South's rate. From 1984 to 1987 North Carolina's rate increased somewhat faster than the South's rate, but from 1987 to 1991, after the cap was enacted, it increased at the same speed as the South's rate.[29] The national rate increased slower than the other two rates during the 1980s.

Robbery. North Carolina's robbery rate (see Figure 5) was much lower than either the South's or the nation's

Figure 7
Burglary Rate

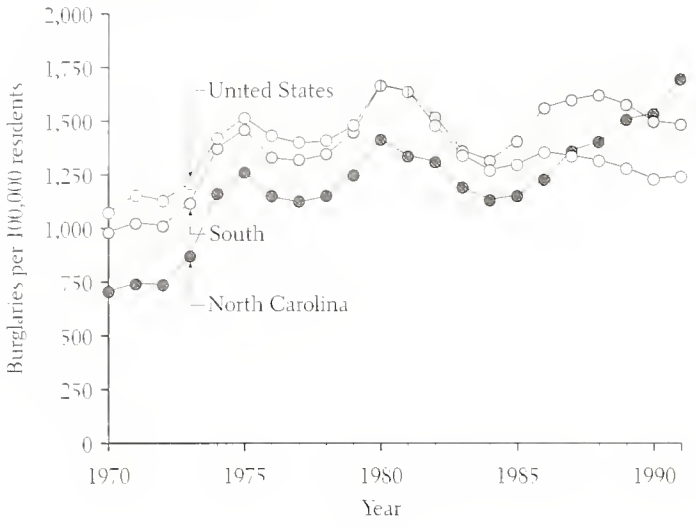
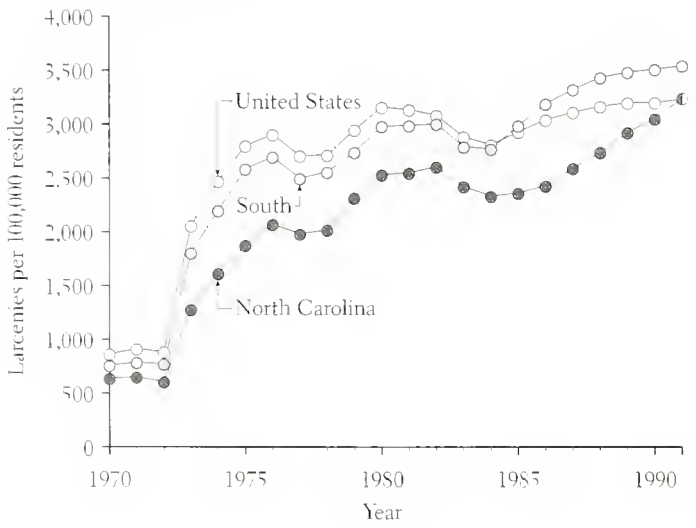


Figure 8
Larceny Rate



rate from 1970 to 1991, but it moved in the same direction. In the 1984–1991 period, its trend essentially paralleled that of the South, increasing only slightly faster (14.7 per year compared with 12.4 for the South). The national rate did not increase quite as fast as the other two (9.4 per year) during the period.

Aggravated assault. In the 1970s, as Figure 6 indicates, North Carolina's rate of aggravated assault was well above those of the South and the nation (which have remained nearly the same). But after 1974 North Carolina's rate dropped. In the 1980s, it coincided with the national rate but dropped below the South's rate. From 1984 to 1991, North Carolina's aggravated assault rate increased somewhat slower than the South's rate (19.4 crimes per 100,000 residents per year, compared to 25.1 for the South).[30]

Burglary. As shown in Figure 7, from 1970 to 1987 North Carolina's burglary rate stayed below the rates for the South and the nation (which were nearly equal) and moved in a parallel direction. But after 1987 the southern and national rates declined while North Carolina's continued to increase, so that by 1991 North Carolina's trend, moving upward, had crossed the other two trends.[31] From 1987 to 1991 North Carolina's burglary rate increased an average of 83.6 crimes per 100,000 residents per year, while the South's rate *decreased* an average of 28.4 crimes per year and the national rate *decreased* by 23.8 per year.

Larceny. The rate of larceny for North Carolina followed the familiar pattern from 1970 to 1984, remaining below and moving in the same direction as the other two rates (Figure 8). But from 1984 to 1991 North Carolina's larceny rate increased somewhat faster than the South's rate (129.7 crimes per year compared to 110.4 for the South). The national rate increased much more slowly than the other two rates during this period (60.2 per year).

Motor vehicle theft. Since 1970 North Carolina's rate of motor vehicle theft has been much lower than the southern and national rates, and in the 1980s it increased much more slowly (see Figure 9). From 1984 to 1991 North Carolina's motor vehicle theft rate increased by 17.3 crimes per 100,000 residents per year, compared to 38.5 for the South and 32.0 for the nation.

Summary. From 1984 to 1991 North Carolina's rates of violent index crime per 100,000 residents generally continued to follow their previous pattern of varying in parallel to the rates for the rest of the South and remaining well below those rates. On the other hand, the state's property index crime rates generally increased faster than those of the South during this period, although they continued to remain below those rates. There were exceptions to both of these general statements. The following summarizes the 1984–1991 increases in North Carolina's index crime rates relative to those of the rest of the South, in terms of yearly increases in crimes per 100,000 residents:

Rate of all violent index crime: Increased slightly slower than South's rate; remained below it.

Murder rate: After 1988 increased much faster than South's rate, but still below South's rate in 1991.

Rape rate: Increased somewhat faster than South's rate from 1984 to 1987, but from 1987 to 1991 (after cap)

increased at same pace as South's rate; remained below South's rate.

Robbery rate: Increased slightly faster than South's rate; remained below it.

Aggravated assault rate: Increased somewhat slower than South's rate; remained below it.

Rate of all property index crime: After 1987 continued to increase, while South's rate almost stopped growing, but still remained below South's rate.

Burglary rate: After 1987 increased while South's rate decreased; exceeded South's rate by 1991.

Larceny rate: Increased somewhat faster than South's rate; remained below it.

Motor vehicle theft rate: Increased much slower than South's rate; remained far below it.

What about the rest of the country? Compared with national crime rates, North Carolina's rates generally followed a parallel trend before 1984 and then increased more rapidly from 1984 to 1991. But the same was generally true of the rest of the South. This suggests that the difference between North Carolina and the rest of the country has more to do with factors affecting the southern region than with North Carolina's prison cap.

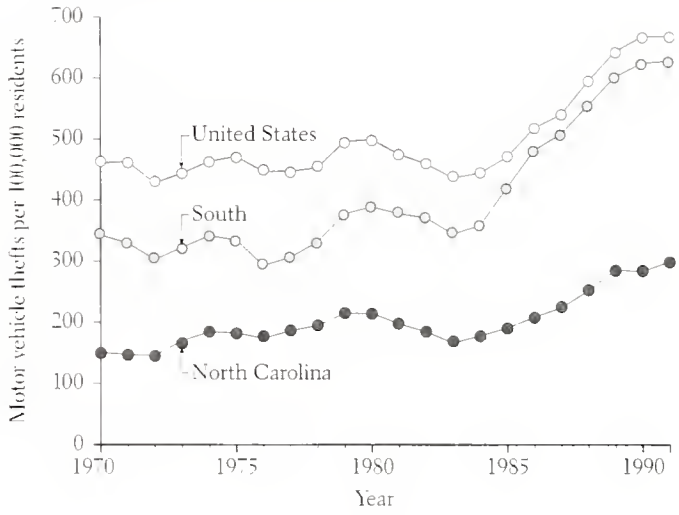
Discussion of the Results

One interpretation of the available data is that because some crime rates increased faster in North Carolina than elsewhere *after* the cap, they increased faster *because of* the cap—in other words, because the reduction in time served in prison "lessened the deterrent and incapacitative effects" of the correctional system.[32]

The interpretation of the data presented here is different. It doesn't seem likely that much of the increase in some crime rates in North Carolina over and above the increase in the rest of the South can be attributed to the cap. The main reasons supporting this interpretation are as follows: (1) Some North Carolina index crime rates—especially rates of the more serious crimes—did *not* increase faster than the South's after the cap, which is inconsistent with the idea that the cap comprehensively increased crime rates. (2) In shortening prison time to implement the cap, the North Carolina Parole Commission has discriminated in favor of less dangerous offenders. (3) The number of additional prisoners freed by the cap is not nearly large enough to account for more than a small part of the differential between North Carolina's increases in some crimes and the South's increases.

Lack of a *comprehensive* increase of North Carolina crime rates compared to those of the rest of the South. During the cap period, North Carolina's rate of rape increased no faster than that of the South, its aggravated assault rate increased somewhat slower, and its robbery rate increased only slightly faster. Its rate of motor vehicle theft increased much slower than the South's rate; this is especially important because motor vehicle theft involves a much greater financial loss, on average, than burglary, larceny, or robbery.[33] North Carolina's rate for the entire category of violent index crime (murder, rape, robbery, and aggravated assault) increased slightly slower than that of the rest of the South. (All these rates remained well below the South's rates.) The data for these crimes is inconsistent with the notion that the cap exerted a substantial, comprehensive influence on serious crime. If the cap has increased crime because it freed dangerous offenders sooner, one would expect to see a comprehensive increase in *all* crime rates compared with the South—not just some crime rates.

Figure 9
Motor Vehicle Theft Rate



Selective decision making by the Parole Commission. In enacting and applying the cap and related measures, the General Assembly and the Parole Commission intended to give priority to less dangerous offenders in shortening prison stays. As explained earlier, the population-limiting legislation's primary effect was to reduce the number of misdemeanants, and it apparently shortened less serious felons' prison time while actually lengthening more serious felons' time. The inverse relationship between time-shortening and offense seriousness is one indication of how discriminating the Parole Commission has been in using its discretion to implement the cap. Data are not available on how other factors (besides current offense) affect Parole Commission decisions, but the commission does take other

recidivism-related factors into account, like the offender's prior convictions.[34]

Small number of offenders freed early by the cap relative to increase in crimes. As has been explained, during the cap period, North Carolina's rates of murder, burglary, and larceny increased faster than those of the rest of the South. To what extent could the cap's prison-time-shortening effects be responsible? To answer this question, an estimate of how much additional free time the cap gave to imprisoned offenders must be made. The year 1990 can be used as an example. As explained earlier, the cap evidently reduced the average time served for misdemeanants by about 3.2 months from 1984 to 1991—about 0.5 months per year over those seven years. For felons, the estimated reduction was 5.0 months from 1987 to 1991—about 1.3 months per year over those four years. Based on the number of misdemeanants and felons released from prison in 1990, the number of additional "person-years" of ex-prisoner freedom produced by the cap in 1990 is 1,819; in other words, the additional freedom produced by the cap was the equivalent of 1,819 more ex-prisoners being free during the entire year 1990 than would have been the case without the cap.[35] These 1,819 will be referred to as *freed offenders* or *offenders freed by the cap*.

Consider burglary first. The data discussed earlier suggest that from 1987 to 1991, North Carolina's burglary rate increased at 83.6 crimes per year per 100,000 residents, while the rate for the rest of the South *decreased* by 28.4 per year; in other words, North Carolina's rate increased faster than the South's by 112.0 burglaries per 100,000 residents per year. In 1990, when North Carolina had approximately 6,629,000 residents, this would amount to about 7,424 burglaries in addition to those that would have occurred if North Carolina's burglary rate had increased at the same pace as the South's. Those additional burglaries, distributed over the 1,819 offenders estimated to have been freed by the cap in 1990, amount to 4.08 burglaries per freed offender during 1990.[36] Could they have committed this many burglaries? Perhaps, but to reach this conclusion one would have to assume they committed far more burglaries than the average offender coming out of prison commits, even though all indications are that the Parole Commission selected offenders with lower-than-average risk for early release. According to a study of recidivism among North Carolina offenders released in 1989,[37] the average offender was arrested for 0.1060 burglaries in the first year after release. These released offenders probably were responsible for more reported burglaries than they were arrested for; the reported burglaries for which they were responsible can be estimated at 0.70 per offender. This estimate probably is quite exaggerated , for two reasons: (1) it assumes that arrested burglars are responsible for all reported burglaries, although in fact in many burglaries, those responsible are not arrested;[38] and (2) offenders released early because of the cap probably had lower-than-average probabilities of recidivism. But even using this exaggerated estimate of the average number of reported burglaries that ex-prisoners could have been responsible for in their first year after release, it seems unlikely that offenders freed early by the cap in 1990 could have been responsible for more than a small fraction of the increased number of burglaries in North Carolina in 1990 over and above what would be expected from the trends in the South's burglary rate.

One can apply the same calculation to larceny. North Carolina's larceny rate, as explained, increased faster than the South's rate from 1984 to 1991, by 19.3 larcenies per 100,000 residents per year; this would translate to about 1,279 additional larcenies in 1990 over and above what would have occurred if North Carolina's larceny rate had increased at the same pace as the South's, or 0.7031 per offender freed by the cap during 1990. But on the basis of the recent recidivism study, the estimated number of reported larcenies that ex-prisoners are responsible for during their first year after release—again, probably a very exaggerated estimate—is 0.3052, which is less than half of 0.7031.[39]

For murder, the calculations are as follows. North Carolina's murder rate increased faster than the South's from 1988 to 1991, by 0.64 murders per 100,000 residents per year. In 1990 this amounted to about 42 murders with North Carolina's 1990 population. This would be 0.0231 murders per offender freed by the cap (42 divided by 1,819). But based on the recidivism study, an estimate of homicides that offenders are responsible for during the first year after release is 0.0032 per offender, which is much less than 0.0231.[40]

Possible Contributors to North Carolina's Faster Increase in Some Crime Rates

If the cap's shortening of imprisonment contributed little to the faster increase (compared to the South) of some of North Carolina's crime rates during the cap period, what factors *were* responsible for the faster increase? The cap, by shortening time in prison, may have weakened the threat of punishment as a general deterrent to crime. However, the recently completed study of recidivism suggests that, compensating for the

possible loss of deterrence, the shortening of time may have *reduced* offenders' likelihood of recidivism, and so may the placement of more offenders on community service parole. The recidivism study suggests that the longer an offender stays in prison, other things being equal, the more likely he or she is to be rearrested for a new crime after release, especially for a property offense like burglary or larceny; it also suggests that participation in the community service program reduces rearrest for a variety of offenses.[41]

To determine why the differential increase in some crime rates occurred, one must look at factors such as differential improvements in law enforcement and crime investigation; changes in crime reporting by victims; and demographic, social, and economic changes. The role of these factors is beyond the scope of this article,[42] but it should be noted that social and economic changes are also beyond the power of the criminal justice system to affect. The criminal justice system essentially *reacts* to crime rather than *preventing* crime. It is analogous to the emergency room of a hospital, which reacts to, say, heart attacks and automobile accident injuries, but is unable to prevent them. This is not to say that the criminal justice system has no preventive effects—rather, the point is that the crime problem goes far beyond what the system has to offer. An illustration of this is that those responsible for many crimes are not locked up. In 1991 in North Carolina, 363,638 index crimes (both violent and property) were reported by the UCR. During the same year, 78,721 persons were arrested and 10,898 were admitted to prison for index crimes. The number of offenders sent to prison was only about 3 percent of the number of index crimes reported. It is true that the imprisoned offenders probably were responsible for considerably more than 3 percent of the yearly total of index crimes. But it is also clear that imprisonment does not reach most active offenders; otherwise, there would be much less crime.

The criminal justice system is far from *solving* most index crimes, let alone sending those responsible to prison.[43] Meanwhile, every year substantial numbers of people—primarily young men—start new criminal careers; this is evident from the fact that a large proportion of the persons arrested each year in the United States for index crimes have no prior convictions.[44] Unless these new offenders remain active enough to get caught and convicted several times, they may not accumulate enough of a criminal record to receive a prison sentence. But in the meantime, they may contribute substantially to crime rates. To prevent young people from getting involved in crime, it is necessary to plan community crime prevention efforts on a large scale, going far beyond the boundaries of the criminal justice system.

Conclusion

The General Assembly adopted the prison population cap largely to settle litigation over prison crowding. This article shows strong evidence that from 1984 to 1989, the cap achieved the objective of slowing the growth of the prison population, although since 1989, the state may be returning to its former pattern of rapid growth. The analysis presented in the preceding sections suggests that the slowed growth did not contribute substantially to increased crime rates.

Probably no one who advocated the cap thought it an ideal solution to the problem of prison crowding. It was intended to be an emergency response, not a long-term policy. In 1987, when the cap was enacted, none of its sponsors may have expected it to remain in effect so long. Nevertheless, in mid-1992, the cap is still with us despite efforts to repeal it.[45] Whatever the merits of the cap, it may have bought some time for the state to consider a longer-term solution to the problem. ❖

Notes

1. 1987 N.C. Sess. Laws ch. 7. The settlements of the lawsuits committed the state, among other things, to provide fifty square feet of space per inmate. For a reference to the settlement documents, contact the author or the editor of *Popular Government*.

2. N.C. Gen. Stat. § 148-4.1, as amended.

3. 1983 N.C. Sess. Laws ch. 557; and 1987 N.C. Sess. Laws ch. 7, amending N.C. Gen. Stat. §§ 148-4.1(a) and 15A-1380.2.

4. Community service parole was first authorized on a very restricted basis in 1984 but was used very little until 1987 when eligibility for it was clarified and liberalized; the pressure of the cap law in 1987 contributed to its increased use. 1983 N.C. Sess. Laws, 1984 Reg. Sess., ch. 1098; 1985 N.C. Sess. Laws ch. 453; 1987 N.C. Sess. Laws ch. 47; codified in N.C. Gen. Stat. §§ 15A-1371(h) and 15A-1380.2(h).

5. 1989 N.C. Sess. Laws ch. 1, codified in N.C. Gen. Stat. § 15A-1372(d).

6. *See* Stevens H. Clarke, "North Carolina's Growing Prison Population: Is There an End in Sight?" *Popular Government* 56 (Spring 1991): 9–19. The average prison population was 16,461 in 1984, increased to 17,430 in 1985, and then remained in the 17,500 to 17,800 range through 1989. It increased to 18,418 in 1990 and 19,049 in 1991, an average annual growth rate of 3.9 percent for those two years (in comparison, from 1980 to 1985, the average annual growth rate was 3.0 percent).

7. U.S. Department of Justice, Bureau of Justice Statistics, *Census of State and Federal Correctional Facilities, 1990* (Washington, D.C.: USDOJ, 1992). Only Tennessee (0.5 percent), West Virginia (*minus* 8.0 percent), and Washington state (7.4

percent) had slower prison population growth during this period. The N.C. Department of Correction's data on average prison population show a slightly higher growth rate from 1984 to 1990: 11.9 percent (from 16,461 to 18,418). North Carolina Department of Correction, *Statistical Abstract*, 1984 through 1990 (Raleigh, N.C.: NCDOC, 1985–1991). The difference is due to minor differences in calculations between the federal and state reports.

8. The South includes sixteen southern and border states (including North Carolina) plus the District of Columbia.

9. N.C. Department of Administration, *Department Plans: Outlook and Objectives, 1991–1995* (Raleigh, N.C.: NCDOA, 1991), 84; N.C. General Assembly, 1992 Reg. Sess., H.R. 8298 (Draft Res.), Fiscal Note. The Fiscal Note estimates that without the cap, by the end of the 1992–93 fiscal year, the population would reach 32,400.

10. U.S. Department of Justice, Bureau of Justice Statistics, *Prisoners in 1984* and *Prisoners in 1991* (Washington, D.C.: USDOJ, 1985 and 1992).

11. U.S. Department of Justice, Bureau of Justice Statistics, *Prisoners in 1991* (Washington, D.C.: USDOJ, 1992).

12. See note 6. In the rest of the country, admissions increased somewhat faster than in North Carolina. In the nation as a whole from 1984 to 1990 (data for 1991 are not yet available), annual state prison admissions increased by 106.9 percent (from 229,107 to 474,128). U.S. Department of Justice, Bureau of Justice Statistics, *Prisoners in 1980*, *Prisoners in 1981*, *Prisoners in 1982*, *Prisoners in 1983*, and *Prisoners in 1984* (Washington, D.C.: USDOJ, 1981–1985). The 1991 data probably will show even more of an increase by 1991. The faster growth of admissions is one reason why other states' prison populations generally increased faster than North Carolina's. But the faster increase in admissions is not nearly large enough to account for the fact that state prison populations nationwide grew about six times as fast as North Carolina's from 1984 to 1990. Most of the difference between North Carolina and the rest of the nation in prison population growth rates probably is due to differences in time served by inmates.

13. Misdemeanants are offenders convicted of misdemeanors—crimes punishable by no more than two years' imprisonment. Felons are offenders sentenced for felonies—crimes punishable by maximum prison terms ranging from three years to life, or (in the case of first degree murder) by death.

14. Although misdemeanants' average sentence length increased from 14.2 months to 20.8 months during the period, the average percentage they served declined much faster—from 41.1 percent to 18.5 percent.

15. Where not otherwise indicated in this section, the source is unpublished data provided by Kenneth L. Parker of the Department of Correction research staff. The average sentence length, percentage served, and time served were computed for the *prisoners released in each year indicated*. They include time served until the first release from prison and (unless otherwise indicated) include offenders who went to prison because of revocation of a suspended sentence (probation).

16. Felonies are classified in classes A through J in descending order of seriousness. Here is an example of the inverse relationship between offense seriousness and trends in time served: For Class D felonies like armed robbery (punishable by up to forty years), the average number of months served increased from 62.3 in 1984 to 75.6 in 1991, while for Class H felonies like felonious larceny (punishable by up to ten years), the average declined from 19.7 to 15.2. (These data exclude released offenders who had been serving time on activated suspended sentences.) Looking at data going back to 1980 shows even more evidence that time served generally increased for the most serious felonies after the 1981 Fair Sentencing Act.

17. The examination of crime rates does not dispose of the question of whether the cap increased crime, but may help in answering it. If North Carolina's crime rates increased substantially faster than comparable states' rates, the faster increase would not necessarily prove the theory that the cap is to blame, because other intervening factors may have been responsible, but it would lend support to the theory. On the other hand, if North Carolina's crime rates did not increase more than comparable states' rates, it would not necessarily disprove the theory (the effect could have been masked by intervening factors), but it would give reason to doubt it.

18. Lucien Capone III, special deputy attorney general, *1991 National Prison Conditions Litigation Survey* (Raleigh, N.C.: Office of the Attorney General, undated). The other southern states with limits were Florida, Kentucky, South Carolina, Tennessee, and Texas. Nationwide, thirty-two states responded to this survey; it is unclear how many southern states did not respond.

19. U.S. Department of Justice, Bureau of Justice Statistics, *Census of State and Federal Correctional Facilities 1990* (Washington, D.C.: USDOJ, 1992), 7.

20. Stevens H. Clarke, "Crime: It's a Serious Problem, but Is It Really Increasing?" *Popular Government* 58 (Summer 1992): 34–39.

21. These rates are found in the U.S. Department of Justice, Federal Bureau of Investigation, *Uniform Crime Reports*, 1970 through 1990 (Washington, D.C.: USDOJ, 1971–1991).

22. U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census, *Commerce News* (Oct. 1, 1992): 2, and (Dec. 30, 1991): tbl. 1.

23. Murder as the term is used here refers to what the *Uniform Crime Reports* call "murder and nonnegligent manslaughter," which includes any intentional killing of a human being except for killing caused by negligence or suicide and justifiable killing. U.S. Department of Justice, Federal Bureau of Investigation, *Uniform Crime Reports 1990* (Washington, D.C.: USDOJ, 1991), 5.

24. Aggravated assault is "an unlawful attack by one person upon another for the purpose of inflicting severe or aggravated bodily injury." It is "usually accompanied by the use of a weapon or by means likely to produce death or great bodily harm." Attempted aggravated assault also is counted in the aggravated assault category. U.S. Department of Justice, Federal Bureau of Investigation, *Uniform Crime Reports 1990* (Washington, D.C.: USDOJ, 1991), 23.

25. The trend lines shown in the graphs are smoothed curves mathematically fitted to the actual data points (which also are shown).

26. In terms of *percentages*, North Carolina's increase was greater than the rest of the South's because its violent index crime rate began at a lower level. The average annual percentage increase over the 1984–1991 period, using 1984 as a base,

was 9.0 percent for North Carolina, 6.4 percent for the South, and 5.1 percent for the nation. However, this is what would be expected when North Carolina's rate is lower than the rest of the South's rate but moves in a parallel direction.

27. From 1987 to 1991 the South's property index crime rate increased annually by an average of 56.6 crimes per 100,000 residents, and the nation's increased by 38.4.

28. From 1988 to 1991 the murder rate for the rest of the South increased from 10.6 to 12.2 (an average of 0.5 per year) and the rate for the rest of the nation increased from 8.5 to 9.8 (an average of 0.4 per year).

29. From 1984 to 1987 the average annual increase in rape rates was 1.9 crimes per 100,000 residents for North Carolina, 0.4 for the South, and 0.4 for the nation. From 1987 to 1991 the average annual increase was 1.4 for North Carolina, 1.4 for the rest of the South, and 1.2 for the rest of the nation.

30. For the national aggravated assault rate, the average annual increase from 1984 to 1991 was 20.4.

31. The average annual increase from 1984 to 1990 in the burglary rate was 66.5 for North Carolina, 30.2 for the South, and minus 6.9 for the nation (the nation's rate decreased over the period).

32. This argument is made by David E. Jones, director of the Criminal Justice Analysis Center, North Carolina Governor's Crime Commission. See David E. Jones, "Length of Stay in Prison, Inmate Recidivism, and the Recent Trend in Reported Crime," *System Stats* 8 (Governor's Crime Commission, Department of Crime Control and Public Safety, Dec. 1992). Jones also attributes an increase in the percentage of offenders returning to prison to a weakening of the deterrent effect of imprisonment. Of course, other things could explain the recent increases in the return-to-prison rate—for example, the changing "mix" of offenders in prison, the strengthening of law enforcement [see Stevens H. Clarke, "North Carolina's Growing Prison Population: Is There an End in Sight?" *Popular Government* 56 (Spring 1991): 9–19, on both these points], or social or economic factors that have increased crime generally.

33. In 1991 in North Carolina, the average reported loss was $4,519 for motor vehicle theft, compared with $880 for burglary, $395 for larceny (the UCR definition of larceny excludes motor vehicles), and $536 for robbery. N.C. Department of Justice, State Bureau of Investigation, *Crime in North Carolina: 1991 Uniform Crime Reports* (Raleigh, N.C.: NCDOJ, undated), 137. Of course, robbery's seriousness consists of more than the financial loss to the victim, because force or the threat of force is involved. Burglary (including the crime of breaking or entering in North Carolina law) also can be accompanied by violence to occupants of the home or other building broken into, but if so, the offense is not counted as a burglary. According to the UCR's "hierarchy rule," if a homicide, rape, robbery, or aggravated assault occurs in the course of a burglary, the offense is counted as one of those other offenses rather than as a burglary. See U.S. Department of Justice, Federal Bureau of Investigation, *Uniform Crime Reporting Handbook* (Washington, D.C.: USDOJ, 1984), 33.

34. This should not be taken as an endorsement of the commonly held view that the offender's current offense is a good predictor of recidivism. It is not—especially when data on criminal history are available. See Stevens H. Clarke and Anita L. Harrison, "Criminal Recidivism: How Is It Affected by Community Correctional Programs and Imprisonment?" *Popular Government* 58 (Summer 1992): 19–28. In making parole decisions, the Parole Commission must consider the type of current offense first (largely because the current offense determines what eligibility laws apply), but it also considers the offender's criminal history, which is a much better predictor of recidivism than the current offense type.

35. The term *person-year* is used here to mean one ex-prisoner freed for one year. The shortening of misdemeanants' time as a fraction of a year is estimated at 0.5 months divided by twelve months, or 0.0417 years. The shortening of felons' time as a fraction of a year is 1.3 months divided by twelve months, or 0.1083. Multiplying each of these fractions of a year by the corresponding number of persons released from prison in 1990 (11,072 misdemeanants and 12,525 felons) yields 461 misdemeanants and 1,358 felons, or a total of 1,819 freed person-years.

36. The 4.08 is computed by dividing 7,424 by 1,819.

37 Stevens H. Clarke and Anita L. Harrison, "Criminal Recidivism: How Is It Affected by Community Correctional Programs and Imprisonment?" *Popular Government* 58 (Summer 1992): 19–28. The data used here are unpublished data from this recidivism study.

38. In 1990 in North Carolina, the ratio of reported burglaries to arrests for burglary was 6.62 (101,444/15,316). N.C. Department of Justice, State Bureau of Investigation, *Crime in North Carolina: 1990 Uniform Crime Reports* (Raleigh, N.C.: NCDOJ, 1991). If one assumes—which is unlikely—that persons arrested for these offenses are responsible for *all* the reported offenses in their year of arrest, the average number of burglaries per ex-prisoner would be 0.1060 times 6.62, or 0.7017. This figure is probably much larger than the true average because the perpetrators of many burglaries are not arrested for their crimes.

39. The 0.3052 is computed by multiplying the number of larceny arrests per released offender in the first year of freedom (0.0549) by the ratio of reported larcenies to larceny arrests (202,059/36,338, or 5.56). As explained in the previous footnote, this is exaggerated because it assumes that arrested thieves are responsible for all larcenies reported in the year of arrest, and also because offenders freed early because of the cap probably had lower than average probabilities of recidivism.

40. The 0.0032 is computed by multiplying the number of murder arrests per released offender in the first year of freedom (0.0032) by the ratio of reported murders to murder arrests, which is approximately equal to one (murderers are almost always arrested).

41. Stevens H. Clarke and Anita L. Harrison, "Criminal Recidivism: How Is It Affected by Community Correctional Programs and Imprisonment?" *Popular Government* 58 (Summer 1992): 19–28.

42. The possible role of improvements in law enforcement is discussed in Stevens H. Clarke, "Crime: It's a Serious Problem, but Is It Really Increasing?" *Popular Government* 58 (Summer 1992): 34–39.

43. North Carolina's *clearance rate*—the percentage of index crimes the police believe they have solved—was 23.7 percent of index crimes in 1991. N.C. Department of Justice,

State Bureau of Investigation, *Crime in North Carolina: 1991 Uniform Crime Reports* (Raleigh, N.C.: NCDOJ, undated), 16, 188. Note that an arrest of a single suspect may "clear" more than one reported crime.

44. According to 1988 data from the seventy-five largest counties in the country, about half of those arrested for index offenses have no prior convictions. Kathleen Maguire and Timothy J. Flanagan, eds. *Sourcebook of Criminal Justice Statistics 1990* (Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics, 1991), 440.

45. Legislation to repeal the cap was introduced in 1992 (H.R. 1549 and S. 1131) but did not pass.

In the Pursuit of Excellence: Mecklenburg County Begins Implementing Total Quality Management

Gary R. Rassel and Sharon Kugelmass

Vision, teamwork, quality, customer satisfaction, leadership, continuous improvement: these terms are used often in Mecklenburg County today as it embarks on a strategy to change the way the county does business. The new strategy, called the Pursuit of Excellence, is a response to the increased demands of rapid population growth, a recession, revenue shortfalls, and growing taxpayer expectations to do more with less. This strategy is modeled on a business-oriented management philosophy called total quality management, or TQM. According to Mecklenburg County Manager Jerry Fox "TQM means all of us need to have the skills, the flexibility, and the support to continuously improve the way we provide services to meet the needs of the citizens of Mecklenburg County."[1]

This article discusses the origins and purposes of TQM and its application in government agencies; it then turns to Mecklenburg County's plan for implementing TQM and the reasons for doing so. Although it is too early to assess any impact on service delivery and customer satisfaction, the article describes progress to date and concludes with preliminary observations.

What Is TQM?

Total quality management involves the development of a culture and systems within an organization that enhance productivity, quality, and customer service. In a study of TQM conducted for the United States Navy and the Office of Personnel Management, the management consulting firm Booz, Allen, and Hamilton, Inc., state that implementing TQM involves the following fundamental changes:

1. Increased emphasis on teamwork
2. Focus on quality and customer satisfaction
3. Greater involvement of employees in process improvements
4. Focus on continuous improvement
5. Increased interest in training and development[2]

These recommended changes are extracted from management consultant W. Edwards Deming's "Fourteen Points," which provide the basis for the TQM philosophy. Deming first applied his principles concerning quality to the training of engineers and managers at Bell Laboratories but is most widely known for his contributions to the post-World War II rebuilding of Japanese industry.[3]

Deming's management philosophy addresses the need for a long-term commitment to quality, to constant improvement in work procedures and outcomes, to employee training and involvement in planning and decision making, and to customer satisfaction. A four-stage Deming cycle is often used to aid management in the pursuit of continuous improvements in these areas. The cycle is also known as PDCA for the four stages: Plan, Do, Check, and Act. The Plan stage involves data collection and development of an action plan to decrease the differences between customer needs and organizational performance. In the Do stage the action plan is implemented on a trial basis. During the Check stage the plan is monitored to determine results and identify necessary changes. In the Act stage modifications are made

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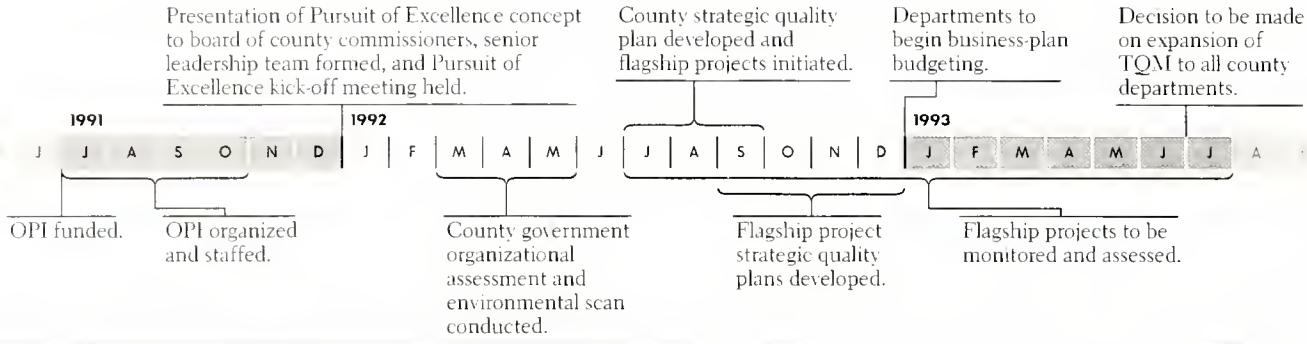
An Outline of Mecklenburg County's TQM Activities and Short-Term Plans



to the plan based on the Check stage. This PDCA cycle returns to the plan stage and continues on in an unending process.

The Deming approach includes aspects of industrial engineering and organizational development such as quality circles. Quality circles involve teams of workers closest to the making of a product or the delivery of a service. They meet regularly to discuss methods of work and product improvement. Quality circles were developed in Japan in the 1970s as part of company-wide quality control efforts. Many American companies tried them without the success achieved by Japanese companies. The current concept of *total quality* management comes from a recognition that quality circles are only a part of a much larger methodology of quality improvement. As the name implies, total quality management focuses on quality and on all of those aspects of an organization that can improve it.

With TQM the organization is committed to quality at every level—customer service, product design, participative problem solving, and follow-through in delivery of a product or service. To measure quality, TQM systems focus on customer satisfaction. Organizations must properly identify relevant customers and obtain accurate and timely information on their satisfaction to stay true to this principle.[4] In a total quality management approach, organizations are recognized as having internal as well as external customers. Departments within an organization look upon each other as customers to be satisfied.[5]

Because TQM was first applied to private production industries, many have questioned whether quality improvement and customer-based systems can be adopted successfully in governments. Public sector applications, however, show that TQM can make a difference in government. Examples of successful TQM systems include Madison, Wisconsin, and the state of Arkansas.[6]

The city of Madison, Wisconsin, initiated a quality program in 1983 after its mayor heard a presentation by Edwards Deming. The city was facing typical problems of revenue constraints, escalating costs, demands for better service, and taxpayer dissatisfaction.[7] Madison's first efforts were in the city garage where employees reduced a twenty-four-step purchasing process to just three steps, reduced average vehicle repair turn-around time from nine days to three and saved more than $700,000 in one year. Other successful projects were carried out in the city's streets division, health and data processing departments, and day-care program.

Arkansas state government introduced TQM in six agencies and the governor's office in 1990. The Department of Finance and Administration substantially reduced the time needed to process income tax refunds and to issue vehicle licenses by mail. The Department of Education eliminated twenty-four reports, reducing costs and giving teachers more time in the classroom. Arkansas allows departments to reallocate funds saved through quality improvement projects, which protects state employees from resultant layoffs.[8]

Successful TQM systems have also been developed by the California Department of Motor Vehicles and a number of United States government agencies. Several major universities are also implementing and teaching TQM.

Why Implement TQM in Mecklenburg County?

Population growth in recent years and the recent recession have increased the demand for county services. Debt service has grown continuously and is projected to do so for the next few years. Some local revenues have been reduced because of the recession, while at the same time revenues from state and federal sources have been cut. As a result Mecklenburg County has increased property tax rates for seven straight years. In each of the past

two years county commissioners announced a temporary freeze on hiring. These and other concerns led the county to search for ways to change procedures.

Mecklenburg County has implemented several management tools in recent years. Among these are zero-base budgeting, introduced in 1982,[9] and a quality assurance program for human services functions, established in 1987. These initiatives offered some improvements but also had drawbacks. The zero-base budgeting system proved to be very time consuming, and, in recent years, commissioners have complained that it does not enable them to set priorities and identify sufficient opportunities for reducing expenditures. Commissioners and managers began searching for ways to streamline and modify the budget process.

In 1990 a citizen's management review committee, appointed by the county commissioners, recommended some major changes for Mecklenburg County government, including the creation of a special unit to conduct management studies and implement management improvements. The committee also recommended that the county change its budget process. In response to these recommendations, the county manager proposed the Office of Productivity Improvement (OPI) to be placed administratively in the county manager's office. County commissioners approved funding for this unit for July 1, 1991.

The commissioners modified the zero-base budgeting process for the 1992–93 budget. Early in 1992 they adopted a proposal to develop a new format to replace zero-base budgeting. This format, based on a results-oriented budget process, is to be phased in over three years. It is called business-plan budgeting and will focus on desired programmatic outcomes and objectives. Budget requests and appropriations will be directed toward the accomplishment of these outcomes and objectives.

OPI's mandate is "to work in partnership with county leadership in creating an environment that builds and sustains a culture of continuous improvement" and to "provide . . . services in accordance with the Total Quality Management (TQM) approach."[10] Staff from OPI are to provide technical assistance and training to county decision makers and departments. The services they are to provide include education on TQM, group-process facilitation, and team-based problem solving and decision making, as well as training in technical areas such as statistical process control, flow charting, value-added analysis, and data analysis. OPI currently has six professional staff members, five recruited from the former Human Services Quality Assurance Group and one from outside the county government. An assistant county manager with TQM experience in local government oversees the office.

How Will TQM Be Implemented in Mecklenburg County?

County officials and employees recognize that TQM is a complex and continuous process of improvement that will take several years to implement. Thus far the county appears to be following the four stages of Deming's Plan-Do-Check-Act cycle in implementing the new management approach. To date county management has (1) formed a senior leadership team responsible for planning and decision making, (2) conducted a study to assess the existing organization and its environment, (3) developed a strategic plan for correcting problems and implementing needed changes, and (4) begun to apply the strategic plan in four "flagship" projects in different departments.

The senior leadership team consists of the county manager and four assistant county managers. Their role is to plan, schedule, and monitor the changes necessary for continuous improvement. They have met weekly as a group with OPI staff since January, 1992.

The senior leadership team launched the second stage of the process by authorizing OPI to conduct a study of the county government's organizational culture and operations in relation to demands and resources. The study consisted of an *organizational assessment* and *environmental scan* based on Jay R. Galbraith's organizational development model. This model identifies a number of components important to the internal design and operations of an organization.[11] The primary purpose of the study was diagnostic—to identify strengths and weaknesses in county operations and determine where corrective action and restructuring were needed.

OPI used three sets of tools to obtain information for the study: an employee survey, individual and group interviews, and a records and documents review.[12] They distributed a questionnaire to all county employees in March of 1992. A total of 1,455 personnel returned completed questionnaires to OPI, representing a 40 percent response rate. OPI then interviewed a random sample of 246 employees, including department heads. The interviews provided additional information on trends within the organizational environment and conditions that could affect the county over the next three to five years. Organization charts, budgets, and job classifications were analyzed for additional information.

In the third stage, OPI compiled the findings of the study and shared them with the senior leadership team,

who used them in establishing specific goals and strategies. The results, also distributed to all county employees, included the following:

1. The working environment of Mecklenburg County is complex, dynamic, and uncertain.
2. The county has a clear-cut vision but has no comprehensive or integrated plan of action; in other words, no strategy for dealing with the challenges the environment presents.
3. In general there are too many layers of management and the county's organizational structure inhibits coordination and communication between work units and departments.
4. Rules and procedures make it difficult for people to do their work well, and job expectations are not always appropriate to the task at hand.
5. Training and performance evaluations do not consistently provide standards for developing skills and improving quality. Innovation and excellence are not systematically supported and linked to rewards.[13]

During the summer of 1992, the senior leadership team publicized the survey results, communicating them to employees in newsletters and small groups, and solicited employee feedback and comments. The county manager summarized the results and discussed them on videotapes, which were shown to employees in small groups. Virtually all county employees, including department heads and assistant managers, attended these sessions. The assistant county managers discussed the survey results and presented their vision for Mecklenburg County. They primarily listened, however, as employees raised questions and talked about new and old issues. For the most part, employee comments confirmed and clarified the survey results and were so helpful that the assistant county managers recommended future meetings, despite the time required.

Survey results and subsequent employee comments helped the senior leadership team and OPI to identify key issues that would prevent the county from realizing its vision. The senior leadership team has begun to develop strategies to remove these barriers and correct problems. These strategies were described in a countywide *strategic quality plan* presented to department heads at the county's annual executive retreat in late September. Department heads responded to the county plan and are developing specific strategies for promoting change in their departments.

At the same time that the TQM effort is under way, the county has been preparing to implement its new business-plan budgeting process. Even though it is not part of the formal TQM implementation plan, the new budget process complements the plan because together they provide the impetus and the means for closing the gap between the county's vision and the status quo. Business plans are program budgets intended to link desirable outcomes to resources. The business planning process will be important in identifying county goals, setting priorities, and allocating resources to carry out the specific strategies and action plans of the strategic quality plan. Measurement and evaluation techniques will also be used to determine the extent that desired changes have been met and to ensure conformance with the business plan.[14]

The fourth stage in implementing TQM is to test various strategies in four flagship projects before applying them to other departments. The strategic quality plan is intended to be a multi-year planning document subject to modification based on the results of the flagship experiences. Each flagship project will establish its own senior leadership team and the specifics of its strategic quality plan. Because the flagship projects have just begun, little in the way of results is available at this writing. Each flagship project is expected to last a year or longer. The improvement process is constantly evolving and specific details still need to be developed.

What Lessons Have Been Learned?

County officials anticipate that it will take from five to eight years to implement all of the changes that they envision. Although Mecklenburg County is still in the early stages of the process, it can offer some lessons for others implementing quality improvement systems. OPI staff members stress the importance of stable leadership in the manager's position and a long-standing knowledge of the local government's organization and processes. Moreover the manager's support is needed for obtaining and targeting resources and for ensuring departmental cooperation. The manager must be strongly and visibly committed to quality improvements.

Just as stable and committed leadership is needed, so is flexibility. County elected officials and managers must be willing to experiment with change on an incremental and trial basis. TQM methods and standards cannot be imposed without continuous adaptation to the needs of the organization and the community it serves. Staff of OPI also state that employees and leaders must be motivated and possess a certain readiness for change to implement a TQM system.

Although senior leadership support has been visible and deliberate, it is only a beginning. OPI has been able

to concentrate on the quality improvement program without other distractions. It still remains to be seen whether sufficient employee support will be forthcoming to make the Pursuit of Excellence a success. ❖

Notes

1. Jerry Fox, "Perspective," *Mecklenburg County Outlook* 23 (April 1992): 2.

2. Joyce Doria, Linda Carrigan, and Douglas Kuhn, "Development of a Performance Management Model Consistent with Total Quality Management," *Productivity and Quality Improvement in Government*, ed. John Fargher, Jr. (Norcross, Ga.: Institute of Industrial Engineers, 1992), 325–29.

3. Howard Gitlow, Shelley Gitlow, Alan Oppenheim, and Rosa Oppenheim, *Tools and Methods for the Improvement of Quality* (Homewood, Ill.: Irwin, 1989).

4. For a discussion of methods for measuring and improving customer satisfaction in county government, see Wally Hill, "Improving Customer Satisfaction in Government," *Popular Government* 57 (Winter 1992): 2–10.

5. Thomas Patten, "Beyond Systems—The Politics of Managing in a TQM Environment," *National Productivity Review* 11 (Winter 1992): 9–19.

6. For a discussion of these topics and examples, see James E. Swiss, "Adapting Total Quality Management (TQM) to Government," *Public Administration Review* 52 (July–August 1992): 356–62; Jonathon Walters, "The Cult of Total Quality," *Governing* 5 (May 1992): 38–42; "Quality in the Public Sector," *Business Week*, special bonus issue (October 25, 1991): 131–45.

7. Joseph Sensenbrenner, "Quality Comes to City Hall," *Harvard Business Review* 69 (March-April 1991): 64–75.

8. Jan Partain, "Creating a Grassroots Quality Revolution in Arkansas," *National Productivity Review* 11 (Winter 1991–92): 21–29.

9. Theoretically, zero-base budgeting requires that all continuing expenditures be justified anew each year along with new and expanded programs. Most zero-base budgeting formats require the preparation of at least three service-level options with associated outputs and expenditures. For more information on zero-base budgeting, see Gary R. Rassel, "Zero-Base Budgeting in Mecklenburg County," *Popular Government* 56 (Summer 1990): 43–47.

10. Mecklenburg County Department of Budget and Resource Management, *Budget and Workplan, FY 1991–92* (Charlotte, N.C.: Mecklenburg County DBRM, 1991): 79.

11. Jay R. Galbraith, *Organizational Design* (Reading, Mass.: Addison-Wesley, 1977).

12. Mecklenburg County Office of Productivity Improvement, *Executive Summary: Organizational Assessment and Environmental Scan* (Charlotte, N.C.: Mecklenburg County OPI, June 1992).

13. Mecklenburg County Office of Productivity Improvement, *Executive Summary: Organizational Assessment and Environmental Scan* (Charlotte, N.C.: Mecklenburg County OPI, June 1992).

14. Harold S. Williams and Arthur Y. Webb, *Outcome Funding: A New Approach to Public Sector Grantmaking* (Rensselaerville, N.Y.: The Rensselaerville Institute, 1991).

1993: A New Day for Collecting Local Property Taxes on Automobiles

William A. Campbell

For more than twenty-five years, local government officials in North Carolina have been looking for a better way to assess and collect property taxes on motor vehicles. Many car owners fail to list their cars for taxes each January, requiring the tax assessor to "discover" the property at a high administrative cost. And many car owners fail to pay the taxes when due, requiring the tax collector to pursue remedies for enforced collection, again at a high administrative cost. Studies done in 1989–90 by the North Carolina General Assembly's Fiscal Research Division estimated that local governments lose between 10 and 15 million dollars each year in property taxes on motor vehicles that they would have received if the taxes on every taxable vehicle were paid on time. Responding to these concerns, the 1991 General Assembly enacted a new set of statutes that, effective January 1, 1993, completely alters the procedures for levying and collecting property taxes on most motor vehicles in the state. The central feature of the new procedures is that a motor vehicle owner will receive a tax bill for the vehicle approximately three months after the vehicle is registered or the registration is renewed, and the billings will be generated from lists sent to the counties by the Division of Motor Vehicles (DMV). The vehicle owner must pay the taxes before the vehicle's registration may be renewed the following year. This article describes the new provisions and offers some examples of how they will affect the collection of property taxes on automobiles.

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Coverage of the New Provisions

The new law—North Carolina General Statutes (G.S.) sections 105-330 through -330.8—applies to classified motor vehicles, which as a result of the law's definitions, includes most private passenger vehicles, both registered and unregistered. G.S. 105-330 adopts by reference the definition of motor vehicles in G.S. 20-4.01 (23). This definition includes all automobiles, motorcycles, trucks, and trailers. All of these vehicles are classified for taxation as provided in the new law except mobile homes, offices, and classrooms; semitrailers registered on a multiyear basis under G.S. 20-88(c); vehicles exempt from registration under G.S. 20-51 (most of these are farm tractors and other farm vehicles); and motor vehicles owned or leased by a public service company. These categories of excepted property will continue to be listed and taxed as they are under current law.

The new procedures are for the taxation of classified motor vehicles that are registered. Unregistered classified motor vehicles will continue to be taxed as they are now: they will be listed during the January listing period, they will be subject to discovery if they are not listed during the regular listing period, and taxes on the vehicles will be due September 1 each year.

The New Procedures

The new procedures for the collection of property taxes on automobiles are detailed below, with reference to the appropriate statute. The procedures discussed apply to the taxation of classified registered motor vehicles. The sample calendar on page 29 gives an idea of when these procedures occur.

Appraisal, Ownership, and Situs

The appraised value of a motor vehicle is to be determined as of January 1 preceding the date the current registration is renewed or a new registration is applied for.[1] If the value of a new vehicle cannot be determined as of the preceding January 1 (for instance, if a new model vehicle is introduced for sale after January 1), the date that model vehicle was first offered for sale in North Carolina will be used for the determination.[2] The ownership, situs (city and county of taxation), and taxability (whether or not the vehicle qualifies for an exemption) of a vehicle is determined as of the day on which the current registration is renewed or a new registration is applied for.[3] A vehicle owner may appeal the appraisal, situs, or taxability pursuant to G.S. 105-312(d) (appeals in

the case of discovered property), but the tax must be paid when due, subject to a full or partial refund when the appeal is decided.[4] The vehicle owner must file the appeal within thirty days of the date on the tax bill for the vehicle.[5] The taxpayer's initial appeal will be filed with the assessor. The next level of appeal is the board of equalization and review or a special appeals committee for motor vehicles that the county board of commissioners may appoint pursuant to G.S. 105-325.1.

Exempt Vehicles

An owner of a vehicle who claims an exemption or exclusion from taxation (for instance, a church or private school that owns vehicles) must file an application with the assessor.[6] Once the assessor approves the application, the vehicle or vehicles described in the application are omitted from the tax records and will not be billed. The owner of an exempt vehicle is required to report to the assessor when the vehicle no longer qualifies for the exemption.[7] If the owner fails to make the report, the vehicle is subject to discovery pursuant to G.S. 105-312, but instead of the 10 percent late-listing penalty, the penalty is $100 for each registration period that elapsed before the disqualification was discovered.[8]

Listing

Each month, on or before the tenth day of the month, the Division of Motor Vehicles will send to each county assessor a list of vehicles registered under the staggered system (passenger cars and most other vehicles) for which registration was renewed or for which a new registration was obtained in the county during the second preceding month (that is, during the month preceding the last one).[9] For example, during the first ten days of September the Division of Motor Vehicles will mail the lists of vehicles registered in July. For vehicles registered under the annual system (certain commercial trucks whose registration is renewed only during the month of December), the Division of Motor Vehicles will forward the registration lists to the assessor by March 10 each year.[10] The assessor prepares the tax bills from these lists and from whatever sources the assessor uses to obtain appraisal information; vehicles are to be appraised at market value. The vehicle owner has no duty to list the vehicle for taxes, there can be no discovery, and the $100 penalty for false certification in G.S. 105-312(h1) is repealed. In preparing the tax bill, the assessor uses the tax rates in effect in the month in which the registration would have expired or in which the new registration was applied for.[11] The tax bill prepared by the county assessor contains all county, municipal, and special district taxes.[12] Under this new procedure, the county bills and collects taxes for all municipalities and special districts in the county.

Collection

As soon as the bills on motor vehicles are prepared each month, the county tax collector mails them to the vehicle owners. For vehicles registered under the staggered system, taxes are due on the first day of the fourth month following the date the registration would have expired or following the last day of the month in which the new registration was applied for.[13] For example, if a vehicle's registration would have expired in June or a vehicle was newly registered in June, the taxes on that vehicle will be due the following October 1. Taxes for vehicles registered under the annual system are due May 1 each year.[14] The taxes are included in the tax levy for the fiscal year in which they become due and are charged to the tax collector for that year.[15] In the

Sample Calendar of New Property Tax Collection Procedures on Automobiles

The following calendar illustrates the operation of the new procedures. This example assumes that the vehicle registration expires on July 31, 1993.

Date	Action
June 30, 1993	DMV mails renewal notice and card to the vehicle owner.
September 10, 1993	DMV sends list of July renewals to the assessor.
October 15, 1993 (Approximate date)	Tax collector mails tax bills.
November 1, 1993	Tax due date for July renewals. These taxes are included in the levy and charged to the collector.
December 1, 1993	Interest at the rate of ¾ percent a month begins to accrue on unpaid taxes due on motor vehicles the registration of which was renewed in July.
March 10, 1994	Tax collector mails list of delinquent taxpayers to DMV. Owner may not renew the vehicle's registration until the tax is paid.

example given above, if a vehicle is registered in June of 1994 the taxes on the vehicle are due October 1, 1994, and would be included in the 1994 tax levy. The county may retain up to 1 1/2 percent of municipal and special district taxes collected as an administrative charge.[16] Taxes collected for municipalities and special districts are to be remitted to those units within thirty days of the date of collection.[17]

Enforcement

Interest accrues at the rate of 3/4 percent a month if the taxes on a motor vehicle are unpaid one month following the due date.[18] For example, if the due date is October 1, interest begins to accrue at the rate of 3/4 percent a month on November 1 and continues to accrue until the taxes are paid. To enforce collection of taxes after interest has begun to accrue, the collector may levy on the vehicle taxed, may levy on other property of the taxpayer, or may use the remedies of attachment and garnishment against the taxpayer's intangible personal property under the procedures provided in G.S. 105-368.[19] The tax on a motor vehicle does not become a lien on any real property owned by the owner of the vehicle.[20] Because the taxes are not a lien on real estate, they will no longer be included in a homeowner's mortgage escrow payments.

A new enforcement provision is included by which the registration of a vehicle may not be renewed if the taxes are unpaid. On or before the tenth day of each month, the tax collector is required to send to the Division of Motor Vehicles a list with the owner's name and address and the vehicle identification number of every vehicle on which the taxes remain unpaid on that date and which were due on the first day of the fourth month preceding that date.[21] For example, on December 10, the collector will forward to DMV a list of unpaid taxes that became due August 1 (these are vehicles that were registered in April). The Division of Motor Vehicles will then refuse to renew the registration of any vehicle on the list, if a renewal application is made by the owner on the list, until the taxes are paid. A person to whom a listed vehicle was transferred in good faith may obtain a renewal of registration without paying the taxes.

Transfer and Surrender of Plates

The tax year for a motor vehicle begins on the first day of the month following the date the registration expires or a new registration is applied for and runs for twelve months.[22] If a vehicle owner transfers the registration plate from one vehicle to another during the first vehicle's tax year, the vehicle to which the plates are transferred is not taxed until the current registration expires or is renewed.[23] But at that time the owner will be unable to renew the registration of the second vehicle until the taxes on the first vehicle are paid. The owner of the first vehicle is always the taxpayer for that tax year and remains liable to the enforced collection remedies discussed above for collection of the taxes on that vehicle.

If the owner of a vehicle transfers the vehicle to another person and surrenders the registration plate for that vehicle to the Division of Motor Vehicles during the tax year and at least one full calendar month remains in the tax year, the owner may apply to the tax collector for a refund or release of a prorated amount of the taxes for that year, the proration being based on the number of full calendar months remaining in the tax year.[24] The application for the refund or release must be made to the tax collector within sixty days of the surrender of the plate.

Effective Date and Transition Provisions

The new procedures for taxing motor vehicles become effective January 1, 1993. Certain transition provisions are included for the first year only. Vehicles registered under the staggered system in January and February of 1993 will not be taxed under the new procedures until 1994. Vehicles registered under the staggered system in March of 1993 will be taxed under the new procedures in 1993; taxes on those vehicles will be due July 1, 1993. Vehicles registered under the annual system during December of 1992 and vehicles whose registration expired in December of 1992 will be taxed in 1993 under the new procedures. Taxes on those vehicles, for 1993 only, will be due July 1, 1993.

Examples

It may be helpful to illustrate the operation of the new provisions by a few examples.

Transfer of Plates

Smith renews the registration of his 1985 Buick on August 21, 1993. On December 10, 1993, Smith trades in his Buick on a 1993 Chrysler and transfers the plates to the Chrysler. When he receives the tax bill on the Buick in November, he does not pay it. **Result:** Smith will be unable to renew the registration on the Chrysler in August, 1994, until he pays the taxes on the Buick. [G.S. 105-330.6 and G.S. 20-50.4]

Multiple Vehicles

Jones owns five motor vehicles, and the registration of each vehicle is renewed in a different month. **Result**: Jones will receive five separate tax bills to be paid at different times during the year, *or* she can request that DMV make all five registrations renewable at the same time, in which case the five tax bills will be received in the same month and have the same due date. [G.S. 105-330.4 and G.S. 20-66]

Military Personnel

Brown is serving in the Marine Corps at Cherry Point Marine Corps Air Station. His home of record is Fort Stockton, Texas. On August 15, 1993, Brown purchases a Ford Mustang and registers it in North Carolina. Brown is not taxable on the Ford in North Carolina, but he must file an exemption application with the tax assessor. **Result**: Once Brown files a request for exemption, he will not receive a tax bill for the Ford and may renew the registration with no complications. [G.S. 105-330.3(b) and the Soldiers' and Sailors' Civil Relief Act]

Taxpayer Leaves the State

Moore renews the registration of her 1991 Chevrolet on September 21, 1993. She sells the Chevrolet to Franklin on November 10, 1993, and takes a plane for Alaska where she intends to remain for the indefinite future. **Result**: Nonrenewal of registration will obviously not encourage Moore to pay her taxes in this case; however, should she return to the North Carolina county where she was residing at any time within the ten-year statute of limitations (that is, at any time prior to January 1, 2003), the tax collector can attempt to collect the taxes by means of levy or attachment and garnishment of any property Moore owns at that time. There is no tax lien on the car in the hands of Franklin, but because Franklin will presumably register the car in November, 1993, he will receive a tax bill on the Chevrolet in February, 1994, and those taxes will be due March 1, 1994. [G.S. 105-330.4(a) and -330.6, G.S. 20-50.4]

Registration Not Renewed

The registration of Johnson's 1983 Ford expires September 30, 1993. Johnson parks the car beside a shed on his farm and does not renew the registration. **Result**: Johnson is required to list the car for taxes in January, 1994, and the taxes will be due September 1, 1994, the same as other personal property. As long as it remains unregistered it will be listed and taxed the same as other personal property. [G.S. 105-330.3(a)(2)]

Registered Owner Dies

The registration of Clark's 1991 Buick expires November 30, 1993. Clark renews the registration on November 20, 1993. Clark dies on January 24, 1994, and his will bequeaths all of his personal property to his nephew, Miller. **Result**: Clark's estate will owe taxes on the Buick for December and January but will be entitled to a release or refund of the taxes for the remaining ten months. Miller must apply for a transfer of registration to him, and his tax year begins when he applies for the transfer. If, for example, he applies for the transfer in February, 1994, his tax year begins on March 1, 1994, and he will be billed for taxes due June 1, 1994. [G.S. 20-72, 20-77, 105-330.4(a), 105-330.6]

Conclusion

The new procedures—when fully implemented—will increase the tax revenue local governments receive from motor vehicles. They will also give taxpayers who own more than one vehicle the choice of spreading tax payments over the year or paying the taxes on all vehicles in the same month. ❖

Notes

1. G.S. 105-330.2(a).
2. G.S. 105-330.2(a).
3. G.S. 105-330.2(a).
4. G.S. 105-330.2(b).
5. G.S. 105-330.2(b).
6. G.S. 105-330.4(b).
7. G.S. 105-330.4(c).
8. G.S. 105-330.4(c).
9. G.S. 20-50.3.
10. G.S. 20-50.3.
11. G.S. 105-330.5(a).
12. G.S. 105-330.5(a).
13. G.S. 105-330.4(a).
14. G.S. 105-330.4(a).
15. G.S. 105-330.5(d).
16. G.S. 105-330.5(c).
17. G.S. 105-330.5(c).
18. G.S. 105-330.4(b).
19. G.S. 105-330.4(c).
20. G.S. 105-330.4(c).
21. G.S. 105-330.7.
22. G.S. 105-330.6(a).
23. G.S. 105-330.6(b).
24. G.S. 105-330.6(d).

Protecting Rights-of-Way for Future Streets and Highways

Richard D. Ducker and George K. Cobb

Major streets and highways in North Carolina often take longer to plan and build and are more costly than they were just a few years ago. There are several reasons why. The decentralization of the economy has resulted in a dispersed pattern of land development that requires the population to be more mobile. Additional automobile traffic means an ever enlarged road network to provide for its safe and efficient movement. As the need for new highways increases, the locational choices for a major road corridor that is environmentally sound and that does not result in social and economic dislocation are dramatically reduced. Developing a plan for roads that is both technically and politically feasible becomes more difficult. If right-of-way acquisition plans are not made when land is developed, the right-of-way will eventually cost more.[1]

As a result, attempts are sometimes made to keep land needed for future rights-of-way free from development until a road's location and alignment are approved and the right-of-way is purchased. Transportation planners in North Carolina often refer to such efforts as *right-of-way protection*.[2] One method of protecting rights-of-way is to enable state and local governments to purchase land for streets and highways far in advance of road construction or to purchase options or less than full title interests in properties that may be critical to a route's location. As a practical matter, however, state and local governments have been unwilling to commit money to buy land in advance because of political pressure to use available funds for current road improvement projects. Instead, there has been interest in using the government's power to regulate land development.

In 1987 the North Carolina General Assembly adopted legislation authorizing local governments and the North Carolina Board of Transportation to use various regulatory techniques to protect the rights-of-way for state and local streets and highways.[3] The powers of local governments to require property owners to reserve land for later purchase as a condition of development permission were expanded. So, too, were local powers to impose exactions—requirements that rights-of-way be dedicated to the public or that public road improvements be provided as a condition of development permission. The reservation techniques are the subject of this article.

Land Reservation Techniques

Land reservation techniques typically involve requiring a property owner to abstain from building in a protected corridor or from expanding buildings already located there.[4] The governmental unit for whom the site is reserved may negotiate its purchase or begin eminent domain proceedings (condemnation) while the reservation is in effect. If the reservation applies only during a defined reservation period and the government fails to purchase the protected property or initiate eminent domain proceedings by the time the period expires, the reservation is lifted and the property owner may develop the reserved portion of the site. The property owner whose land is reserved retains title, tax liability, and a landowner's responsibility for the condition of the land. The owner forfeits the right to use the land for purposes

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inconsistent with its ultimate public use, but he or she is entitled to compensation when the property is taken. The public is able to protect the corridor from future development and to reduce the delay, disruption, and cost of demolishing new site improvements and relocating those who occupy the site. The owners of property that is subject to a reservation gain some assurance that the road, which will benefit them to at least some extent, will be provided at a definite location.

For any land reservation technique to work, there must be general agreement about why a particular road is needed, where the road should be located, what design and construction characteristics it will have, who will pay for it, and when it will be constructed. The need for a particular urban road is often identified during, or incorporated into, the preparation or update of a comprehensive street plan. Section 136-66.2 of the North Carolina General Statutes (G.S.) provides for each North Carolina city and the North Carolina Department of Transportation (NCDOT) to develop cooperatively a comprehensive plan for a street system to serve vehicular traffic in and around the municipality. Such plans have become known as thoroughfare plans because they typically address the need and location of major streets and highways such as thoroughfares and arterial streets but not collector and more minor local streets. More than 177 thoroughfare plans involving 242 municipalities and 34 counties have been prepared for adoption by NCDOT since 1959.[5]

A thoroughfare plan typically shows the general location of thoroughfares proposed for construction by some future date. Routes for proposed thoroughfares are often shown as dotted lines on a thoroughfare plan map with a scale anywhere from 500 feet to 5,000 feet per inch. These lines represent proposed road corridors; they do not represent precise street and highway alignments. The width of the lines generally is not scaled to reflect the projected right-of-way of the proposed road. More importantly, lines can indicate general corridors ranging from several hundred feet to several thousand feet in width within which the precise alignment of roads will later be fixed. It is therefore important that a more specific road alignment be developed if the location of the road and the interests of property owners are to be protected effectively and fairly.

To translate the general location of a road into a specific one, it is necessary to determine what function the road will perform and what design and construction characteristics it will display. Not only must it be decided how the road might fit into existing topography and development, it must also be determined what access it will furnish to adjacent land, the nature of intersections or interchanges with cross streets and highways, the number of lanes, and, of course, the width of the proposed right-of-way. These characteristics define the so-called *functional classification* of the road. Preparation of a general design for the particular road segment showing these functional characteristics (a *functional plan*) is part of the engineering design work necessary before construction begins,[6] as well as being a practical prerequisite for right-of-way protection.

Any attempt to protect a future roadway location from development must be coordinated with the scheduling, programming, and construction of the road improvement project. Rights-of-way may only be protected selectively. Only a small portion of all of the potential road improvement projects shown on local thoroughfare plans can be undertaken and completed within the seven-year budgeting period used in the state's Transportation Improvement Program (TIP). Inclusion of a state highway project in the TIP adopted by the North Carolina Board of Transportation is a good but certainly not infallible indicator that the project will be funded and completed. State highway projects for which rights-of-way might be protected may also be funded through the North Carolina Highway Trust Fund. Some assurance that the agency with appropriate jurisdiction has approved a project's location and has committed funds to it is probably a legal prerequisite as well. In reversing the trial court ruling upholding a reservation in *Wilson Realty Co. v. City-County Planning Board of Winston-Salem and Forsyth County*, the North Carolina Supreme Court pointed out that the parkway for which the planning board sought a reservation had not been approved or authorized by either the Winston-Salem Board of Aldermen or the North Carolina Highway and Public Works Commission.[7]

Even if it is clear that the project is proceeding according to schedule, land suitable for new road improvements generally cannot be protected from development indefinitely. If land is to be protected before it is acquired, then the period of protection should be coordinated closely with the timing of right-of-way acquisition, design, and construction.

Official Roadway Maps

Probably the most prominent reservation tool authorized by the 1987 right-of-way legislation was the North Carolina Roadway Corridor Official Map Act.[8] The legislation was intended to improve substantially the legal authority upon which formal reservations of road corridors

could be made. Under the act, units of government may prepare and adopt an official map showing the proposed alignment of any segment of an eligible street, road, or highway. The right-of-way boundaries may be described by map or written description. (The act does not require that the route be surveyed, but to fix the corridor boundaries with precision, it is generally necessary to do so.) The North Carolina Board of Transportation may adopt an official map for any road included or to be included in the state highway system. A municipality may adopt such a map for any street or highway shown on its mutually adopted thoroughfare plan, regardless of whether it is a state road or city street. The original version of the Roadway Corridor Official Map Act allowed a city to adopt an official map only for a road improvement project that was included in the city's capital improvement program and allowed the Board of Transportation to do so only for a project included in the state TIP.[9] Although these requirements were repealed in 1989, the act still requires that work on an environmental impact statement or preliminary engineering begin within a year after the official map is adopted. These requirements provide more indirect assurance that the project for which the right-of-way is to be protected is a viable one.

An official map may be adopted only after a public hearing is held, and the map becomes effective only after it is recorded. Once recorded, state law provides that neither a building permit for any building or structure within the designated corridor nor the approval of a subdivision may be delayed for a period greater than three years after application for a building permit or subdivision approval is made. The new law authorizes the unit of government that adopts the official map to acquire land within the reserved corridor. (A city may expend funds to purchase the right-of-way even though the land may be located in its extraterritorial planning area.) If a city purchases the right-of-way for a road that has already been designated a state responsibility for purposes of a local street plan, the state is obligated to reimburse the city for acquiring the right-of-way at the time the road is constructed.

To mitigate the impact on the owner of property included within the area of an official map, G.S. 136-44.53 provides that any undeveloped, unsubdivided land located within an official map roadway corridor is to be taxed at 20 percent of the general tax rate levied on real property. In addition, the zoning board of adjustment is authorized to grant variances for corridor properties if the owner can earn no reasonable return from the land (even with the tax benefits) and the development limitations create practical difficulties or unnecessary hardships.

There have been few official maps adopted by North Carolina municipalities since the authorizing legislation was adopted. In 1987 the city of Statesville adopted an official map for a crosstown limited-access two-lane road (Industrial Boulevard) that connects Interstate 40 with Interstate 77. The official map was used only for the last phase of the three-phase project. Eventually, the right-of-way that was subject to the official map was purchased. However, the three-year reservation period was never triggered by an application for a building permit or subdivision plat approval. In 1988 the city of High Point also adopted an official map. It applied to a stretch of the U.S. 311 Bypass of about nine miles in length, proposed as a four-lane divided freeway, extending around the north and eastern sides of the city. Acquisition of right-of-way in the reserved corridor has been completed for this project, and construction is expected to begin soon.

Other municipalities have not followed suit, however. Some are concerned about unresolved legal issues and the threat of liability. The fact that an official map does not lend itself to be used in a model ordinance has also been a hindrance. In addition, the state has traditionally purchased the rights-of-way for major roads and constructed those roads. Many local governments have been reluctant to assume a greater role and responsibility in this area. Still other communities may simply prefer using other methods of right-of-way protection that they have found to be more effective.

The Board of Transportation has adopted official maps for six road segments within the state.[10] All of the projects for which the state has adopted official maps are projects that were included on the TIP when the maps were adopted. In each case a final environmental impact statement has been prepared and approved for the project prior to map adoption. Official maps for an additional fifteen projects are scheduled to be adopted within the next two years.

Setback Requirements

Another technique for reserving land for new or widened roads is to require buildings, structures, and other improvements to be set back from proposed new road locations. Today, virtually all zoning ordinances establish setback (or yard) requirements for each district that are designed to prevent buildings and other structures from being located too close to existing streets. In addition, since 1971 North Carolina cities have enjoyed independent authority, applicable only inside city limits, to establish classes of such setbacks that vary according to the

class or function of the street or highway upon which a lot abuts. In 1987 this special setback legislation (codified as G.S. 160A-306) was extended to counties (G.S. 153A-326) and expanded to permit setback requirements to be established from "proposed" as well as existing streets. These setback requirements, measured from proposed streets, are sometimes called *transitional setbacks*. Although the stated purpose of the statutes is not to protect the right-of-way or reduce condemnation awards, its effect will make it easier for governments to do so. The question raised by the 1987 amendment is the extent to which plans for a new road must be crystallized before the road can qualify as "proposed." Specific setback requirements cannot be enforced without a bench-mark road right-of-way line or center line from which to measure. Setback requirements are particularly useful if an existing right-of-way is to be widened. They can also be established for roads on a new location once a relatively specific alignment is determined.

In a recent survey, 66 percent of North Carolina cities reported that they had established setback requirements for proposed streets.[11] If a surveyed center line for a road has been established, setback requirements are easy for even a small town to adopt and enforce. Transitional setbacks seldom provoke much controversy so long as the imposition of the setback does not severely restrict the land available for a suitable building site.

Requirements for State and Federally Aided Highways

A practical and legal problem arises if a road is at least partly funded with federal money and requires the preparation of environmental documents under the National Environmental Policy Act (NEPA)[12] or is state funded and is subject to the North Carolina Environmental Policy Act (NCEPA).[13] Take the federal act for example. It requires environmental analysis of "major Federal actions significantly affecting the quality of the human environment."[14] An implied premise of the act is that the review of project alternatives, environmental impacts, and mitigation measures provides the basis upon which the choice of location is made and, by logical implication, precedes it. Federal highway regulations prohibit, with certain exceptions, the use of federal funds to acquire rights-of-way for a federally assisted highway project until the Federal Highway Administration has approved the general project location and the concepts described in the approved environmental documents.[15]

Several recent federal court decisions, however, have declared that advance acquisition of land may itself be an environmentally neutral action, even though the land is expected to be used for a federally aided construction project that would be subject to NEPA.[16] Other cases have suggested that the acquisition of land need not necessarily prejudice the environmental assessment of the construction of the project and the use of the proposed facility; the land may be sold if it is not used.[17] These arguments are reflected in changes to the federal highway statutes adopted in December of 1991 that liberalize the circumstances in which federal funds may be used to reimburse states for acquiring land for projects that have not yet received location approval from the Federal Highway Administration. For reimbursement to be available, however, the Federal Highway Administration must find that the acquisition "did not influence the environmental assessment of the project, the decision relative to the need to construct the project, or the selection of the project design or location."[18] Highway planners have argued that if only select parcels are acquired—particularly if land is acquired in more than one corridor—it should be possible for these findings to be made.[19] Nonetheless it is difficult to believe that a state or local attempt to reserve a right-of-way to accommodate a specific alignment may not be the most critical step in fixing the ultimate alignment of the road. Unless the reservation decision itself is based on the review of environmental information sufficient to comply with NEPA,[20] future environmental reviews that follow the imposition of the reservation may not truly provide the basis for selecting the best location. Similar considerations apply to road projects subject to the North Carolina Environmental Policy Act.[21]

Constitutional Issues

The reservation of rights-of-way for future public use raises constitutional questions that concern where the regulatory power of government ends and the principle of just compensation begins. The Fifth Amendment to the United States Constitution allows a government to take private property for public use, as long as the owner is compensated. This is the law of eminent domain. However, land-use jurisprudence makes it clear that a "taking" may occur not only because the power of eminent domain has been exercised; it is also possible for a government to exercise its regulatory power in such a way as to take private property even though it may have no plans to acquire the property or to compensate the owner.[22] The mere adoption of a thoroughfare or street plan does not amount to a taking, even though it may possibly impact particular properties.[23] Where land

reservation is concerned, however, the taking question is a peculiar one because the affected land is intended to be both regulated and acquired. Compensation is provided for the road right-of-way at its market value when it is eventually purchased. The critical question is whether the reservation requirement can be considered a taking during the period before acquisition ever occurs.

Recent holdings of the United States Supreme Court find that a land-use regulation may constitute an unconstitutional taking (1) if it does not substantially advance a legitimate government interest or (2) if it deprives an owner of the economically viable use of his or her property.[24] It is generally conceded that reservation techniques promote the legitimate governmental interests of (1) planning new roads, (2) promoting orderly growth and development, and (3) promoting the coordination of new roads with the existing and future street system. These measures also prevent the construction of real estate improvements that would otherwise have to be acquired, thereby reducing the actual costs of right-of-way acquisition and relocation. Whether these purposes, or the means chosen to achieve them, are permissible has never been fully resolved by the courts. A number of courts have upheld the concept of reservation and have recognized the reduction of right-of-way acquisition costs as at least a legitimate byproduct of reservation.[25] However, land reservation efforts have continued to be plagued by court decisions in various states that reject the very concept of reservation. Some courts have held that a reservation freezes or depresses the value of property planned for later acquisition and amounts to an impermissible attempt to evade payment of full compensation (including the payment of damages to the property during the period the reservation is in effect).[26]

A related taking question concerns the significance of the duration of the reservation period. Ironically, reservations of unlimited or indefinite duration (for instance, requirements that structures be set back from proposed future road boundaries) have often fared better in court than reservations of limited duration. Specific reservation periods are set forth in two sets of North Carolina statutes. The Roadway Corridor Official Map Act provides that building permits and subdivision plat approvals for property within a mapped corridor may be delayed no more than three years.[27] The school-site reservation statutes, authorizing cities and counties to require subdividers to reserve school sites, provide that the reservation is lifted if land is not purchased within eighteen months.[28] Though North Carolina courts have not had occasion to rule on the matter, courts elsewhere generally have not upheld specific reservation periods of more than a year.[29] Considered in this context, a three-year reservation period, provided for in the Roadway Corridor Official Map Act, may be legally precarious.

The question of specific reservation periods was complicated by the 1987 United States Supreme Court ruling in *First English Evangelical Lutheran Church of Glendale v. County of Los Angeles.*[30] It held that even though a regulation amounts to an unconstitutional taking, mere invalidation of the regulation is an insufficient remedy. According to the Court, the United States Constitution requires that compensation be paid for the "temporary taking" that occurred prior to invalidation while the ordinance remained in effect. The Court did not determine whether such a taking had occurred in the case before it, but it did declare that "normal delays in obtaining building permits, changes in the zoning ordinances, variances, and the like" would neither be compensable nor constitute takings.[31] Because the regulation that was the subject of *First English* was interim in nature, some have argued that a deprivation of reasonable use—except for normal administrative delays—for even a temporary period of time gives rise to a "temporary taking" for which damages must be paid under the United States Constitution.[32] If that is true, reservations may be in legal jeopardy for this reason alone. Others have pointed out that the *First English* case was remanded to the California Court of Appeals to determine whether the application of a flood hazard regulation to the church's property did in fact constitute a taking. On remand, the court held that no regulatory taking had occurred. According to the California court, the Supreme Court decision in *First English* did not convert a temporary development ban into a temporary taking unless it was "unreasonable in purpose, duration, or scope."[33] This reasoning is consistent with the notion that time is simply one element in the mix of factors used to determine the effect of a regulation on a particular property and that no taking occurs if an owner is afforded reasonable use of the property over a reasonable period of time. There is, however, no clear support for this position in recent United States Supreme Court jurisprudence.

A reservation requirement may also result in a taking if it deprives a property owner of a reasonable use of his or her property. This may depend on whether the land being considered is the reserved corridor alone or the owner's entire tract of land. If the entire tract is the unit of analysis, then a reserved corridor that occupies only a small portion of the acreage of the tract and leaves ample opportunities for development may be constitutionally safe.[34] If, however, the unit of analysis is the reserved corridor itself and the land within the corridor is

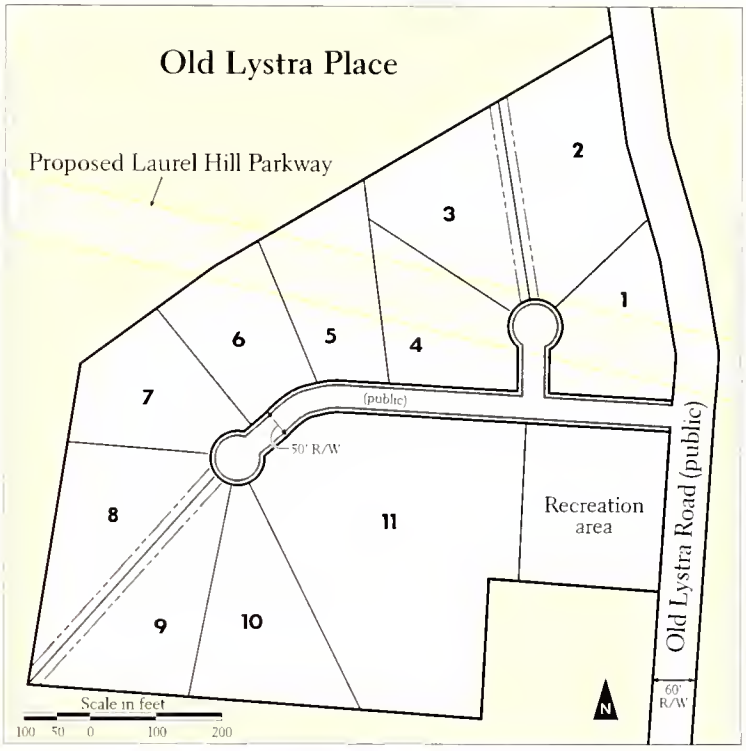
not already developed, then chances are quite high that a taking will be found, at least with respect to the land in the corridor. Most reservation restrictions prohibit virtually all development in the corridor.

One other factor that may influence whether a reservation is held to be a taking is the extent of the benefit that the road will confer on the property subject to the reservation when the road is built. If the benefits are relatively insubstantial when compared with the detrimental impacts of the road, a taking is more likely to be found. For example, if a small subdivider is asked to reserve the corridor right-of-way for a limited-access highway with a proposed 240-foot right-of-way, it is more likely that a taking has occurred. However, if the developer of a shopping center is expected to reserve land for the extension of an arterial city street, a more significant portion of the traffic that will use the land will likely be generated by the development. It is important to note, however, that it is not necessary to show that there is a substantial connection between the need for the road and the traffic generated by the development of the remainder of the tract.[35] If the road principally serves the traffic generated by the development, the property owner could be required to dedicate the right-of-way and provide the street improvements.

Alternatives to Formal Land Reservation

The various legal problems outlined above have inhibited the use of formal reservation techniques. However, a recent North Carolina Supreme Court decision may point the way to the use of a technique that is closely related to land reservation but without the legal obstacles associated with using formal reservation techniques. North Carolina's subdivision-enabling statutes provide that a local subdivision-control ordinance may provide "for the coordination of streets and highways within proposed subdivisions with existing or planned streets and highways."[36] Provisions of this sort are common in most city and county subdivision ordinances and are generally used to ensure that the streets that are internal or adjacent to a new subdivision are tied into the local street network. Although these "street coordination" provisions may be read to require subdividers to extend roads outside the subdivision into or through the site, in the past this authority has generally not been thought to permit the local government to require the reservation of rights-of-way for roads that are not local in nature and whose capacity is "oversized" with respect to the proposed development.

Figure 1
Subdivision Layout Proposed by Developer and Laurel Hill Parkway Alignment Proposed by Town in *Batch v. Town of Chapel Hill*



Note: The map above is a schematic representation of the plat included in the published opinion of *Batch v. Town of Chapel Hill*. See *Batch*, 326 N.C. at 5, 387 S.E.2d at 657.

The recent North Carolina Supreme Court case *Batch v. Town of Chapel Hill*[37] seems to revitalize this authority. In *Batch* a street coordination provision was held to be sufficient reason to deny approval of a subdivision plat whose design failed to reflect local thoroughfare plans that called for a four-lane parkway to divide the tract. The property owner alleged that the town council denied approval in part because she refused to dedicate a ninety-foot-wide strip of land bisecting the tract to accommodate the parkway corridor. Chapel Hill's town council claimed that it denied approval of the plat in part because the plat failed to conform to the coordination provisions of Chapel Hill's subdivision ordinance. The court upheld the plat denial, declaring,

> A requirement that a subdivision design accommodate future road plans is not necessarily tantamount to compulsory dedication. Rather, such a requirement might legitimately compel a developer to anticipate planned road development in some logical manner when designing a subdivision.[38]

Unfortunately it is unclear just what subdivision design changes would satisfy the coordination requirement.

Figure 1 shows the parkway alignment as proposed by the town superimposed over Batch's proposed subdivision of eleven lots. The possibility of a formal corridor reservation was not discussed in the decision, though the court apparently thought it was not unreasonable for the city to expect that the proposed corridor be kept free from development and that the corridor not significantly interfere with the use of anticipated building sites. In any event, a fair reading of the holding in the case is that a subdivider may not simply ignore thoroughfare plans in designing a site and must make an effort to integrate the development with proposed nonlocal streets that may bisect the tract.

Implications

A variety of legal and practical problems are associated with measures designed to protect the corridors for future streets and highways, and these problems have inhibited the use of those measures. The more traditional reservation techniques (official mapping, subdivision reservations, and setbacks from future streets) can be difficult to apply and in some cases may be clearly inappropriate. They are inappropriate in circumstances where the size of the tract and the scale of development is small and the function of the road is to carry substantial nonlocal traffic. They are inappropriate if functional designs for the road alignment have not been developed or if right-of-way acquisition and construction will not commence for at least several years. The adoption of an official map—even the adoption of special building setbacks—carries with it at least moderate legal risk and is a step that should be taken only with extra caution.

Land reservation techniques, however, do have their place and can be quite effective. The specific delineation of a road corridor is often sufficient to induce affected property owners to take it into account in making their own plans. It may serve as notice that the governmental unit is serious about proceeding with the project and that land acquisition negotiations will soon begin. In some cases when official maps are adopted, affected property owners never formally apply for permission to build or subdivide within the protected corridor, and the reservation period never begins. Even if a reservation technique is found to constitute a taking as it is applied to a particular parcel, the consequences must be put into perspective. At worst, a governmental unit that already intends to purchase a right-of-way for a road improvement project[4] may also be expected to pay for damages to the property during the period the reservation is in effect, plus attorneys' fees and court costs. In any case, reservation techniques should be viewed simply as possible measures available to protect rights-of-way.

Perhaps the safest strategy for a local unit of government to follow is to use the subdivision street coordination authority sanctioned in the North Carolina Supreme Court's decision in *Batch*. This authority provides a flexible tool for local governments to use in negotiating with developers and allows a local government to sidestep some of the legal and practical problems associated with defining a precise alignment and imposing a specific development restriction.

Although right-of-way protection techniques must be used selectively and sensitively, there will continue to be opportunities for local governments and the state to use them to better integrate thoroughfare planning and road construction programming with the review and regulation of development. ❖

Notes

1. Tabulated time-series statistics comparing right-of-way acquisition costs as a percentage of project costs for projects in the urban areas of North Carolina are unavailable.

2. Some planners use the term *corridor protection* or *corridor preservation*. See American Association of State Highway and Transportation Officials, *Report of the AASHTO Task Force on Corridor Preservation* (Washington, D.C.: AASHTO, July, 1990). A roadway corridor is a planning area of varying width that is sufficient to accommodate a number of specific road alignments and location alternatives. Because it is generally not possible to protect multiple road alignments within a broad corridor of potential route locations, *right-of-way protection* is a more apt term. For an extensive survey and analysis of the use of right-of-way protection techniques by North Carolina local governments, see George K. Cobb, "Local Issues and Options for the Protection of Highway Right-of-Way: A Delphi Survey" (unpublished thesis for master's in public administration, The University of North Carolina at Charlotte, 1991).

3. Virtually all of the legislation was included in House Bill 1211 [1987 N.C. Sess. Laws ch. 747]. The legislation is summarized in Richard D. Ducker and Philip P. Green, Jr., "Planning, Development, and Land Use Regulation," *North Carolina Legislation 1987*, ed. J. Ferrell (Chapel Hill, N.C.: Institute of Government, The University of North Carolina at Chapel Hill, 1987), 195–213. The provisions of the act related to corridor protection added or amended the following sections of the North Carolina General Statutes: Roadway Corridor Official Map Act [G.S. 136-44.50 to -44.53]; municipal and county road setbacks [G.S. 160A-306 and G.S. 153A-326]; municipal curb cut regulations [G.S. 160A-307]; municipal and county subdivision authority for fees in lieu of road improvements [G.S. 160A-372 and G.S. 153A-332]; and density or development right transfers for right-of-way dedications [G.S. 136-66.10 to -66.11].

4. See generally the following: Robert Anderson, *American Law of Zoning*, 3d ed. (Rochester, N.Y.: Lawyers' Co-operative

Publishing Co., 1986 & Supp. 1991), vol. 4, §§ 25.25, 26.01, and 26.16; Annette Kolis and Daniel Mandelker, "Legal Techniques for Reserving Right of Way for Future Projects Including Corridor Protection," *National Cooperative Highway Research Program Research Results Digest* no. 165 (Washington, D.C.: Transportation Research Board, 1987).

5. North Carolina Department of Transportation, Division of Highways, Planning and Research Branch, Statewide Planning Group, *Status of Thoroughfare Planning* (Raleigh, N.C.: NCDOT, January 30, 1992), 1.

6. The term *functional plan* was chosen by NCDOT highway planners so that some of the early work of this type might qualify for highway "planning" funds. It is generally conceded that much of the work might properly be classified as *preliminary engineering*.

7. 243 N.C. 648, 650, 92 S.E.2d 82, 84 (1956).

8. G.S. 136-44.50 to 44.53 (Supp. 1991). North Carolina's current municipal and county subdivision enabling legislation makes only passing reference to the power of cities and counties to reserve land for streets. G.S. 160A-372 (municipalities) and G.S. 153A-331 (counties) declare simply that a local subdivision ordinance "may provide . . . for the dedication or reservation . . . of rights-of-way or easements for street and utility purposes." The municipal street-reservation provisions date from 1955; the county provisions date from 1959. These do not define what is meant by reservation, what effect a reservation of land for a street has, how the street must be described, how long a reservation may last, or how the reserved corridor is to be shown on a subdivision plat. Street reservation under the subdivision statutes has been largely superseded by the Roadway Corridor Official Map Act. Nevertheless, a sizable number of local governments report that their subdivision ordinances authorize them to protect future roadway corridors. At least 58 percent of the municipalities with a population over 4,500 and 38 percent of the counties report such provisions. Cobb, "Local Issues and Options," 27.

9. G.S. 136-44.50(a) (Supp. 1987).

10. "Roadway Corridor Official Maps: Proposed Schedules," printout from the Programs and Policy Branch, Division of Highways, North Carolina Department of Transportation, July 12, 1991, 1–2.

11. Cobb, "Local Issues and Options," 23.

12. 42 U.S.C. §§ 4321–4347 (1976 & Supp. III 1991).

13. G.S. 113A-1 to -13 (1989 & Supp. 1992). The act requires every state agency to provide a detailed statement included "in every recommendation or report on any action involving expenditure of public moneys or use of public land for projects and programs significantly affecting the quality of the environment of this State." G.S. 113A-4(2) (1989 & Supp. 1992).

14. 42 U.S.C. § 4332(c) (1976).

15. 23 C.F.R. § 771.113(a) & (b) (1990).

16. *See, e.g.*, City of Oak Creek v. Milwaukee Metro Sewage District, 576 F. Supp. 482 (E.D. Wis. 1983); United States v. 162.20 Acres of Land, 639 F.2d 299, 304–5 (5th Cir.), *cert. denied*, 454 U.S. 828 (1981), *aff'd on rehearing*, 733 F.2d 377 (5th Cir. 1984), *cert. denied*, 105 S. Ct. 906 (1985); Cane Creek Conservation Authority v. Orange Water and Sewer, 590 F. Supp. 1123, 1128 n.6 (M.D.N.C. 1984).

17. *See, e.g.*, Stand Together Against Neighborhood Decay, Inc. v. Board of Estimate of New York, 690 F. Supp. 1192 (E.D.N.Y. 1988).

18. 23 U.S.C. § 108(d)(2)(G) (Supp. III 1991).

19. American Association of State Highway and Transportation Officials, *Report of the AASHTO Task Force on Corridor Preservation* (Washington, D.C.: AASHTO, July, 1990), app. B, B-5.

20. The North Carolina Department of Transportation is currently sponsoring several pilot projects to incorporate greater environmental analysis into the preparation of urban thoroughfare plans ("systems planning") to allow the state to obtain Federal Highway Administration corridor approval for specific thoroughfare projects included in the plan and to begin land reservation and land acquisition for those projects. The pilot projects involve the update of the North Wilkesboro-Wilkesboro Thoroughfare Plan and the update of the Asheville Thoroughfare Plan. For a summary of this approach see North Carolina Department of Transportation, Division of Highways, Planning and Research Branch, Statewide Planning Group, *Corridor Preservation—A Status Report* (Raleigh, N.C.: NCDOT, January, 1992).

21. Virtually all state road projects that are likely to have a significant effect on the environment are on the state's primary highway system and are funded in part by the federal government or require a federal environmental permit. In the early stages of the development of new state road projects, it may be unclear whether federal funds or federal permits will be involved. It is the practice of NCDOT in such instances to comply with federal right-of-way acquisition and environmental regulations from the very beginning of land acquisition, in case federal requirements may eventually be triggered.

22. This view dates back at least as far as Pennsylvania Coal Co. v. Mahon, 260 U.S. 393, 415 (1922) (regulation may amount to a taking if it "goes too far").

23. *See, e.g.*, Guinnane v. City of San Francisco, 197 Cal. App. 3d 862, 241 Cal. Rptr. 787 (1987), *cert. denied*, 488 U.S. 823 (1988) (designation on plan for possible acquisition is neither cloud on title nor taking).

24. *See* Lucas v. South Carolina Coastal Council, 60 U.S.L.W. 4842, 4845 (U.S. June 30, 1992) (No. 91-453), and cases cited therein.

25. *See, e.g.*, Carl Freeman Assoc. v. State Roads Comm'n, 252 Md. 319, 330, 250 A.2d 250, 256 (1969); Kingston East Realty Co. v. State Comm'r of Transportation, 133 N.J. Super. 234, 243, 336 A.2d 40, 45 (N.J. Super. Ct. App. Div. 1975).

26. *See, e.g.*, Joint Ventures, Inc. v. Department of Transportation, 563 So.2d 622 (Fla. 1990) (corridor map amounts to taking and violation of due process); Lackman v. Hall, 364 A.2d 1244 (Del. Ch. 1976) (corridor map amounts to taking); Warren Planning & Urban Renewal Comm'n, 388 Mich. 82, 199 N.W.2d 465 (1972) (setback requirement amounts to taking); Miller v. Town of Beaver Falls, 368 Pa. 189, 82 A.2d 36 (1951) (park land reservation amounts to taking).

27. G.S. 136-44.51(Supp. 1991).

28. G.S. 160A-372 (cities); G.S. 153A-331 (counties).

29. In only two reported cases, both interpreting the same statute, has a specific reservation period (165 days) been upheld. Kingston East Realty Co. v. State Comm'r of Transportation, 133 N.J. Super 234, 336 A.2d 40 (N.J. Super. Ct. App. Div. 1975); Reider v. State Dep't of Transportation, 221 N.J. Super. 547, 535 A.2d 512 (N.J. Super. Ct. App. Div. 1987).

30. 482 U.S. 304 (1987).

31. 482 U.S. at 315.

32. *See, e.g.*, Michael M. Berger, "Happy Birthday, Constitution: The Supreme Court Establishes New Ground Rules for Land-Use Planning," *Urban Law* 20 (1988): 735, 773–75.

33. First English Evangelical Lutheran Church of Glendale v. Los Angeles County, 210 Cal. App. 3d 1353, 1373, 258 Cal. Rptr. 893, 906, *cert. denied*, 110 S. Ct 866 (1990).

34. *See, e.g.*, State *ex rel.* Miller v. Manders, 2 Wis.2d 365, 86 N.W.2d 469 (1957); Vangellow v. Rochester, 71 N.Y.S.2d 414, 190 Misc. 128 (1954).

35. In North Carolina a developer may be required "to bear that portion of the cost which bears a rational nexus to the needs created by, and benefits conferred upon that subdivision." Batch v. Town of Chapel Hill, 92 N.C. App. 601, 616, 376 S.E.2d 22, 31 (1989), *rev'd on other grounds*, 326 N.C. 1, 387 S.E.2d 655 (1990), quoting Longridge Bldrs. v. Planning Bd. of Twp. of Princeton, 52 N.J. 348, 350, 245 A.2d 336, 337 (1968).

36. G.S. 160A-372 (cities); G.S. 153A-331 (counties).

37. 326 N.C. 1, 387 S.E.2d 655 (1990), *cert. denied*, 110 S. Ct. 2631 (1990).

38. 326 N.C. at 9, 387 S.E.2d at 663.

39. In an eminent domain proceeding, compensation must be made for the value the property would have had at the time of the taking had reservation restriction not been imposed. Dade County v. Still, 377 So.2d 689 (Fla. 1979).

Around the Institute

Elisa K. Poole Johnson

Mark F. Botts

Johnson and Botts Join Institute Faculty

The Institute of Government welcomed Elisa K. Poole Johnson and Mark F. Botts as new members of the faculty this fall. Johnson joined the Institute in October as assistant program director for legal services with the Principals' Executive Program, while Botts began in November and works in mental health law.

Elisa (Tina) Poole Johnson graduated with a bachelor's degree in history from Yale University in 1987 and received her law degree in 1990, with honors, from the University of Chicago Law School. She has experience as a law clerk for the United States Court of Appeals for the Fourth Circuit in Charlottesville, Virginia, and more recently held a staff attorney position with McGuire, Woods, Battle & Boothe, also in Virginia, working in such areas as health care, general business, and real estate.

Mark Botts graduated summa cum laude from Albion College in 1987 with a bachelor's degree in history. He received his law degree in 1990, magna cum laude, from the University of Michigan Law School, where he earned merit awards in legal research, family law, and writing and advocacy. Botts has judicial clerkship experience, which he gained while working for the United States District Court for the Western District of Michigan and the United States Court of Appeals for the Sixth Circuit. —*Christina E. Self*

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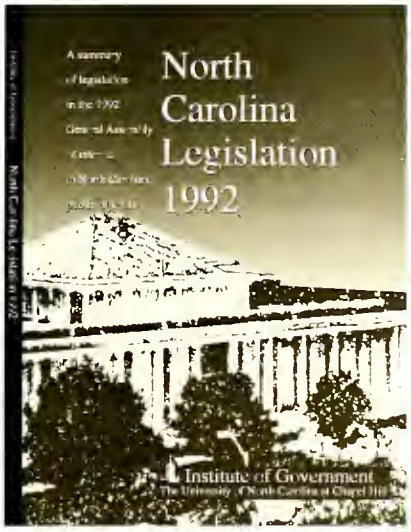

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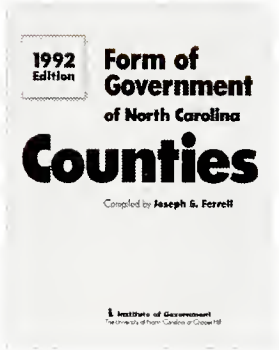

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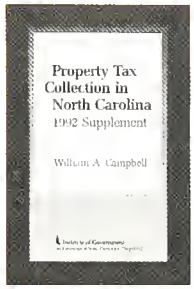

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