EXECUTIVE SUMMARY

The Maricopa County Environmental Services Department respectfully submits this application for the 2001 Samuel J. Crumbine Consumer Protection Award. The vision of the Department's Environmental Health Division is to be Arizona's food protection leader and to achieve national recognition as one of the best in the country. In 1996, while our program was comprehensive and high quality, especially in the areas of enforcement and foodborne illness investigation, certain aspects were targeted for improvement. The Department also had to work within the fiscal guidelines of the County, which required a complete cost recovery system. Computerization of our inspection system was the best way to meet the fiscal requirements of the County, and providing cost savings to permit holders. This computerization also had numerous fringe benefits in allowing overall improvements to our food protection program. Two general areas of our program were targeted for improvement. The Department needed to implement a risk-based approach to our inspection system, and improvement was needed in the area of communication at all levels. This proactive approach to increasing food protection incorporates HACCP principles into our inspection duties. Over the last five years, new and improved programs have been developed, which foster internal communication between administration and staff and external communication between industry, our regulatory staff, and the public. Maricopa County's food protection program has been recognized on the national level for its innovative and proactive approach to food safety. Over the past five years, we have overcome a major obstacle with respect to resources, while still improving our food program on an annual basis. This sustained excellence, along with the improvements discussed in this document, will demonstrate Maricopa County Environmental Health as a deserving candidate for the 2001 Samuel J. Crumbine Consumer Protection Award.

DEMOGRAPHY

Maricopa County, named after the Maricopa Tribe, was designated in 1871, while Arizona was still a Territory of the United States (Figure 1). The County is the 14th largest in the country with respect to area, encompassing 9,226 square miles and is the fifth largest with respect to overall population, having a population greater than 17 states, according to the 1990 U.S. census. The County's population has been estimated to be more than 2.8 million in 1999. The County has the second fastest growth rate in the country, and has been growing rapidly every year since the last national census, according to the U.S. Bureau of Census. This growth reflects a national trend of population shifts toward the Sunbelt states with the majority of growth represented by an influx of working age individuals from the Midwest and California. According to 1990 census information, Maricopa County has a diverse population compromised of 84.8% Caucasian, 3.5% African American, 1.7% Asian or Pacific Islander, 1.8% Native American, and 8.2% other, with 16.3% of the total population being of Hispanic heritage.

Maricopa County contains 24 incorporated cities and 32 unincorporated communities within it's boundaries. The largest of these municipalities are Phoenix, Glendale, Scottsdale, Mesa, and Tempe, Arizona. Numerous noteworthy national events have been and are regularly hosted in the county, including the Super Bowl, Fiesta Bowl, Cactus League Baseball, and the Phoenix Open. The county is also home to a large population of part-time residents during the winter months. With a large migratory population and the proximity to the Mexican border, the county is a center for ethnic diversity, with many different cultural perspectives present and flourishing within it's borders. The size and population of the County, coupled with the immense growth and ethnic diversity, provide many challenges to a single agency with a goal to provide an effective and innovative food protection program.

RESOURCES

In the early 1960's the Maricopa County Health Department was created in order to provide more uniform and effective health regulation in the Phoenix metropolitan area. The original Department has since grown into two public service entities, the Maricopa County Public Health Department and the

Maricopa County Environmental Services Department. The Environmental Services Department is composed of multiple Divisions: Air Quality, Business Services, Community Services, Environmental Health, and Water and Wastewater Management. The Environmental Health Division is responsible for regulation and inspection of food service facilities, public and semi-public swimming pools, public accommodations, schools, and pet shops, as well as the investigation of citizen complaints.

The Environmental Health Division has grown to a staff of 100 including 55 Environmental Health Specialists, 23 Environmental Health Lead Specialists, seven Environmental Health Managers, 14 Office/Administrative Support Staff, and one Division Manager. The total budget for the Division was $4.5 million in fiscal year 2000. In that same fiscal year, the Division brought in revenue of $5.3 million from permit and plan review fees (Table 1; Table 2).

The Division coordinates efforts with numerous other government agencies. We utilize the expertise of the Arizona Department of Health Services Laboratory, which accepts and analyzes food samples collected by our staff in the investigation of foodborne illnesses and outbreaks. The Maricopa County Department of Public Health also maintains a laboratory, which provides bacterial analysis of drinking water. The Environmental Health Division also works with the U.S. Food and Drug Administration regional office, The Arizona Department of Agriculture State Meat and Poultry Inspection Program, and local Native American communities whenever appropriate.

The Environmental Health Division is divided into seven sections consisting of four regional offices (Figure 2). The Division regulates 16,177 permanent food service facilities as well as 10,608 other permitted non-food establishments (Table 3). Each regional office has a manager, assistant manager, and eight to twelve Environmental Health Specialists (EHSs) who spend a majority of their time in the field. While most of the responsibilities of the Division lie in the realm of food protection, field EHSs still have multiple and varied environmental health responsibilities with which to contend and manage on a day to day basis. Each regional office EHS has an assigned district with approximately 500 permitted and inspected facilities(Table 4). The other sections of the Division include: Quality Assurance/Quality Control/Training (QA/QC), Special Programs, and Plan Review/Mobile Food.

FOOD PROTECTION PROGRAM BASELINE

PROGRAM PLANNING–

GOALS AND OBJECTIVES - One of the goals of the Maricopa County Environmental Services Department has always been to provide quality food safety regulation in accordance with our mission, which is: **'To protect and improve the quality of life through responsive and effective environmental management.'** The Department has maintained an effective and comprehensive food protection program throughout its history.

RISK ORIENTATION - In 1996, Division of inspection duties depended solely on the geographic location of an establishment with respect to district boundaries. Food service establishments inspected include: eating and drinking establishments (restaurants), food processors, bakeries, retail groceries, food jobbers (warehousing and distribution), ice manufacturers, food catering establishments, bottled water and beverage plants, meat markets, and mobile food operations. High quality inspections were being done, but due to time limitations and workload, the main focus was on 'keeping up' within each assigned district rather than educating food operators.

STAFF PARTICIPATION - In the past, staff participation in program planning and development was accomplished through monthly regional office, supervisory and mandatory Division meetings. Major program decisions and design occurred primarily at the management/supervisory level, and filtered down to field staff.

SELF-EVALUATION - Prior to 1997, the Division had a limited computer networking system that connected regional offices with other operational offices of the Division. A simple database program allowed for data entry of basic inspection information such as inspection dates, violation numbers and simple business permit information. However, only a few supervisors had computers that could access this information, and it was not accessible to field staff. Most inspection data generated from fieldwork was collected and tracked using paper systems, and later secretarial staff entered basic information into the computer database. Data collected using this system focused on measuring quantity of work and insuring

that the food program met the State of Arizona's delegated two inspections per year per food service establishment.

PROGRAM MANAGEMENT –

EPIDEMIOLOGICAL CAPABILITY - Maricopa County Environmental Health Division, as part of its responsibility to regulate food safety, receives and investigates complaints of foodborne illness by the public. The Division takes much pride in having had a highly effective program for foodborne illness investigation in place for a number of years. The foodborne illness program (FBI program) has been recognized on the national level as indicated by its receipt of a National Association of Counties Achievement Award in 1997 (Figure 3).

When foodborne illness complaints are received, they are referred to the Coordinator of the FBI program. After referral, the complainant is interviewed and detailed lists of symptoms and other pertinent factors on each case are then collected to help determine which foodborne illness, if any, might account for the reported symptoms. Information, such as a doctor's diagnosis and results of medical tests, is also entered at this point. Some foodborne illness cases come through communicable disease reports filed by physicians and laboratories. In these cases the diagnoses are already confirmed and the ill persons may be contacted directly by Environmental Health for additional food history information. Regardless, the standard is to collect a food history covering at least 72 hours prior to the onset of illness. Each meal is evaluated as a possible cause of the reported illness and linked to a permitted establishment. Software used by the program searches the database and alerts the user of any other complaints or communicable and/or foodborne disease reports that have been linked to the same establishment.

After data is evaluated and logged, an alert report is generated noting that either investigation is not required or requesting a field inspection with specific instructions (Figure 4). Instructions are designed to point the field investigator towards the most likely cause(s) of the illness based upon the confirmed or probable diagnosis and the suspect foods. The reports are then faxed, e-mailed, or printed through the computer network to the regional environmental health office or special program area. As investigations

progress, food samples, water samples, laboratory results, findings and status of the final report are logged into the database for easy tracking.

Identifying violations that could cause illness is the first step towards making corrections that prevent future foodborne illness, a substantial benefit to the community at large. An added benefit of maintaining this database is the ease with which monthly, yearly, or periodic reports of activities and statistics can be generated. With this system almost all cases have received same-day response as regards decisions and instructions to the assigned inspectors for food establishments involved in complaints. In addition, the program has been successful in identifying and investigating over forty outbreaks over the last four years (Figure 5). The quality work of the program in this regard has also been reflected through published accounts of outbreaks in the *Morbidity Mortality Weekly Report (1).*

QUALITY ASSURANCE/QUALITY CONTROL – In 1996 it was somewhat difficult to determine how staff was performing. Each regional office manager could review a permitted establishment's inspection history, and field supervisors conducted observational ride-along inspections. While this was adequate for getting a qualitative assessment of staff performance, quantitative data was not available.

EXTERNAL INVOLVEMENT –

INDUSTRY PARTICIPATION – In 1996, the Department's approach to industry was largely that of the typical regulatory agency. Industry operators were preoccupied with the intricacies and hurdles of running a successful business, rather than learning about food science and associated regulatory requirements. Inspectors, with high workload demands, spent much time regulating with little opportunity for educating.

COMMUNITY INVOLVEMENT – In 1996, while public information was available, it was difficult to coordinate access to the information. It typically required 24-hour notice for supervisory staff to review and pull confidential information before the media or the public could view an establishment's file. The person who requested the information had to visit the regional office in person to get this information. If citizens had complaints regarding a food service establishment, they had to call the local regional office and contact the office supervisor or assistant for a particular area. The complainant information was taken and the complaint was assigned to the appropriate inspector. The EHS then investigated the complaint, informed

the complainant of the investigation findings, and documented the appropriate information for supervisory review and placement in an establishment's file. The Division had a minimal relationship with the public and little media exposure. Public awareness programs also were limited.

MANAGER/FOOD SERVICE WORKER TRAINING – Individual food service workers came to the test site, read a test booklet, and took an exam. Upon passing the exam, the food handler was given a food service worker card with no expiration date. While this program ensured minimum knowledge for food service workers in the County, it did not incorporate training or offer opportunities for individuals to gain continuing education in changing food safety issues. In the establishment, inspectors checked for these cards, but often, the information available in the establishment included old photocopies or carbon copies of cards which were unreadable or otherwise not useful for a regulatory check. Also, at this time, no additional training was required for food service managers.

PROGRAM IMPLEMENTATION –

ENFORCEMENT –Environmental Health Specialists in the field take legal action when necessary to gain compliance with the Maricopa County Environmental Health Code (Table 5). Enforcement action is extremely important when individuals show a lack of concern or lack responsibility in serving safe food to the citizens of any jurisdiction. Policies in place within Maricopa County focus on helping challenged establishments improve their level of food safety with the encouragement provided by pending legal action. This system has proven very effective in helping these challenged establishments come into compliance, thereby reducing the risk of foodborne illness in the area. The legal procedures used are described below.

The Maricopa County Environmental Health Code food service regulations are based on Arizona State Statute. These statutes are in turn based on the 1976 Public Health Service Food Service Sanitation Manual (2), and its associated 44-item inspection form. As per the Environmental Health Code, all critical violations (those with a four- or five-point weighted value) noted during an inspection require a follow-up visit within 10 days of the inspection. The Division may place an establishment on probationary status by sending a warning letter to the owner of an establishment based on poor inspection performance.

Warning letters are sent routinely in three circumstances: two consecutive inspection scores of less than 75, one inspection score below 70, or three consecutive visits with the same critical violation noted. Once the warning letter is issued, the facility is placed on probation for six months, with all violations to be corrected and maintained. If there is a return to poor performance during the probationary period, a request for permit revocation is initiated. When the operator receives revocation notice, there is an option of a hearing within 20 days. A hearing may suspend the permit revocation if an Order of Stipulation is signed, which requires the operator to resolve the noted violations and maintain an acceptable level of sanitation for a period of six months. During the stipulation period, supervisory personnel do inspections every six to eight weeks, to insure compliance. If an establishment continues poor performance, the permit is revoked.

The procedure described above has been very effective in gaining compliance for establishments that operate in an unsanitary or unsafe manner. This process, which recognizes the need for legal action as a compliance tool, also allows for establishments to correct their problems and avoid closure. Owners and managers of food service establishments are informed of the importance of maintaining a safe food service environment and the consequences of failing to do so. Inspectors and supervisory staff take extra time and effort during probationary periods in an effort to reeducate these food service operators in safe food operations. A majority of establishments, for which legal action is initiated, begin to comply and maintain a high level of compliance without permit revocation taking place (Figure 6). When operators are completely negligent in the safety of their food service operations, the privilege of operating a food service establishment in Maricopa County is taken away.

In cases where severe and imminent health hazards are present in food service establishments, field EHS's have the ability to immediately suspend the operating permit of any establishment. Inspectors typically suspend establishment operation for such violations as a lack of water under pressure, lack of refrigeration (power outage), or sewage backing up in a kitchen. These suspensions typically last for less than 24 hours, since closing the establishment prompts operators to immediately correct the problem. Environmental Health Specialists must verify correction of the problem before the suspension is lifted (see Table 5).

STAFF TRAINING AND STANDARDIZATION – Prior to 1996, the Division hired staff for new positions as needed. Individual EHSs coming into the program, who were already Registered Sanitarians, were sent to the regional offices with little or no training. Once at the offices, if time permitted, the newly hired EHSs would accompany office staff for a short period of time before being assigned to a district.

While standardization has been recognized as important within the Division since the adoption of the 1976 food code, official standardization had a low priority, as the Department had attempted to keep up with growth in the County. Standardization that did occur focused solely uniformity.

CONCLUSION –

Throughout the last five years Maricopa County Environmental Health has maintained an extremely effective food protection program, while continually striving to improve through the application of fiscally responsible, innovative programs. These programs are designed to meet the challenges presented to the unique environment of the County as well as to be applicable in any modern food protection program.

The Environmental Health Division has constantly gone through a self-evaluatory process with respect to the food protection program in the last five years. We have strived to do the best possible job in this area, continuing to improve our already effective program. We have recognized our strengths in the areas of enforcement and foodborne illness investigation. We also have recognized challenges in the areas of refocusing our program with a risk-based inspection approach and improving communication both internally and externally. Another major challenge that needed to be addressed was the use of available resources, which had the potential to affect all aspects of our current and its needed improvements.

ISSUES, CHALLENGES, AND OUTCOMES

RESOURCES

ISSUE 1: RESOURCES

CHALLENGES:

- **SIZE AND DIVERSITY OF THE COUNTY**
- **LARGE AND RAPID GROWTH OF POPULATION AND FOOD SERVICE INDUSTRY**
- **100% BUDGET RECOVERY SYSTEM**
- **INCREASED STAFFING DEMANDS**
- **INCREASED ACCOUNTABILITY**

METHODS AND OUTCOMES

- **AUTOMATED INSPECTION SYSTEM RESULTS IN INCREASED PRODUCTIVITY AND AN OVERALL COST SAVINGS**
- **INCREASED ABILITY TO IMPLEMENT NEEDED CHANGES IN THE FOOD PROTECTION PROGRAM**

Issue - In 1994, the Environmental Services Department was at a crossroads. One year earlier, Maricopa County had gone through a reduction in workforce, which resulted in smaller staff sizes. The Department provided documentation using numbers such as: inspection numbers, growth, and a growing inspection backlog, which along with a 100% cost recovery permitting system resulted in reorganizationrather than loss of staff. The County, seeking additional revenue sources, required every departmental program to be self-sufficient, while still covering all statutory mandates and internal administrative procedures. The costs incurred by the Department would be recovered from the regulated community based on time/cost allocations. For example, if the Environmental Health Division spent 57% of it's time regulating food service, and 27% on swimming pools, revenue and expenditure budgets would need to reflect these percentages.

Failure to become self sufficient in a fiscally responsible manner might result in loss of budgeted resources to every program in the Division. This might have major negative repercussions with regard to the food protection program. Staff might have to be cut, and quality of inspections might suffer. A problem in the area of resources had the potential to adversely affect everything done by the Division. These issues had to be addressed as a number one priority.

Challenges - The County's cost recovery policy needed to be implemented in a fashion that was fair to our permit holders but still effective toward maintaining a feasible budget. To determine the appropriate cost to each of our permit holders we used two measures, inspection backlog and productivity numbers. Backlog was defined as any scheduled inspection that failed to be done during the month in which it was scheduled to be completed. Inspection dates were based on internal administrative policies as well as the delegation agreement the County had with the State, which requires a certain number of inspections per year for each type of facility. Since backlog could grow regardless of staff size simply based on a lack of productive work being done, a second factor was of great importance as well, a measure of productivity. Since 1993, the Division had established a productivity ranking system based on historical field data observations that determined Key Volume Indicators (KVI). These KVIs were then used to calculate a time coefficient per inspection activity, allocating time comparisons with the actual time spent by the Environmental Health Specialist in daily work.

Inspection output was compared to staffing numbers to gain a measure of Division productivity. Based on a calculation determined by Western Productivity, Inc. (consultants brought in for this purpose by the County), this Division productivity number was of vital importance. When it was 85% or higher the Division would have been considered properly staffed. Productivity rates above 100% would have indicated that staff might have been rushing through inspections, a symptom of covering too large an area or multiple districts. This could have resulted in staff burnout and turnover. At this time the Division had both a productivity level higher than 100% and an ever-growing backlog. A decision needed to be made to address these challenges, coupled with a revised fee structure reflecting the County's cost recovery policy.

Methods – To meet this challenge, two alternative methods were discussed. Using both the measure of productivity and internal inspection frequency guidelines, the Division could calculate the number of inspectors necessary to reach our goals. The first alternative was to increase staff and raise permit fees accordingly. An additional burden of at least $1.25 million would need to be assessed to the regulated community if the Division were to continue business as usual and use increased staff to meet our goals.

Another solution to the inspection/permitting fee increase was to improve the efficiency of the organization. One method of doing this was to eliminate the multiple step process in which inspections were conducted and recorded. This option could be implemented by automating our inspection system, which would require the purchase of a portable field-computer system. This included hardware costs of $300,000.00 and a software development cost of $200,000.00 with a one time expense (with an estimated hardware replacement every three years). This meant a cost savings of over 780% when compared to the increase of staffing ratios of the former proposal, which would also require additional salary and performance adjustments factored into the budget each year.

These two alternatives were proposed at public workshops attended by the regulated community and consumers. When presented with the two proposals their response was to automate our inspection system.

Outcomes – The decision to automate the inspection system had positive outcomes for both the Department and the regulated community. As expected, while there was a substantial investment in equipment, overall program costs were kept to a minimum. Inspectors were supplied with state-of-the-art equipment with the ability to hold a complete database with all establishment information and history available in the field. This also allowed for better information with complete recommendations on all inspection reports using an easily legible printed form. Also, the Division could track and store data in an extremely efficient manner to compare violation frequencies and inspection scores among establishments as well as to look for trends in the community. The biggest winner was the public, who also now has access to an Internet web site where they can search for and monitor information on their favorite establishments and determine where to spend their dining dollars.

Since the inspection system was automated in 1996, productivity has increased by 33% (Figure 7). The computer system was paid for in the first year and our permit fees have not required increase since 1995. The Division's staff-to-permit ratio has decreased over this time as well (Figure 8). The purchase of the computer system was a wise investment for the County and the citizens we serve. While many jurisdictions may feel that field computerization is a luxury, our permit holders, who were involved

completely in the decision making process, will testify to the fact that this was the best fiscal decision we could have made.

RISK-BASED INSPECTION PROGRAM

ISSUE 2: RISK-BASED INSPECTION PROGRAM

CHALLENGES

- **EMPHASIZING RISK WHILE STILL MEETING STATE MANDATED INSPECTION REQUIREMENTS**
  - **LIMITATIONS OF CODE BASED ON 1976 FDA RECOMMENDATIONS**
- **KEEPING CONSISTENCY AND IDENTIFYING RISK IN LARGE CHAINS OF RESTAURANTS**
- **TRAINING OF FOOD SERVICE WORKERS WITH UP TO DATE KNOWLEDGE**

METHODS AND OUTCOMES

- **CREATION OF SPECIALIZED AND INNOVATIVE PROGRAMS PUTS TECHNICAL EXPERTISE WHERE NEEDED TO HELP BOTH STAFF AND INDUSTRY**
- **CREATION OF CHAIN FOOD PROGRAM RESULTS IN CONSISTENCY AND IDENTIFICATION OF HIGH RISK PROBLEMS**
- **REFOCUS ON CRITICAL ITEMS RESULTS IN RISK-BASED EMPHASIS ON INDIVIDUAL INSPECTIONS**
- **PROVIDED LEADERSHIP TOWARD STATE LEGISLATURE ADOPTING THE 1999 FDA MODEL FOOD CODE WHICH SHOULD BE DONE IN THE NEAR FUTURE**
- **ALL FOOD SERVICE ESTABLISHMENTS CATEGORIZED AS TO RISK RESULTS IN MORE TIME SPEND IN HIGHER RISK ESTABLISHMENTS**
- **CHANGE IN CODE FOR FOOD SERVICE WORKERS AND MANAGERS RESULTS IN MORE INDIVIDUALS TRAINED WITH MORE COMPLETE AND UP TO DATE KNOWLEDGE. MANAGER CERTIFICATION MAKES TRAINERS OUT OF OPERATORS**

Issues – Prior to 1996, due to high workload demands and the limitations of the 44-point inspection system in place in the State, much inspection time was spent on equipment, fixture, and plumbing review. A relatively small amount of inspection time was invested in looking at items such as food handling procedures, taking food temperatures, or observing employee hygiene, all high-risk areas. The division of workload was based exclusively on the location of an establishment. All food establishments, despite inherent risk, were treated alike. The level of risk associated with a particular operation and/or an inspector's level of experience and training was not considered. Food service establishments serving high-risk groups (elderly and children) or those with complex, specialized food service operations (such as food processors) were being inspected by district EHSs with varying levels of expertise and knowledge. The wide cultural diversity in the county intensified and complicated these issues.

Challenges – There were no formal programs or activities specifically addressing the application of risk-based food safety management approaches such as Hazard Analysis Critical Control Point (HACCP) to the retail food industry. HACCP training was initiated, but on a limited inconsistent basis. Guidance and education to industry and staff regarding identifying and controlling foodborne illness risk factors was limited. The Division realized a need to change its overall approach from one that was productivity based, to one that was risk-based.

Large chain and franchise food establishments, with multiple locations, occasionally protested about discrepancies between inspectors and policies in different parts of the County. With such a large staff and workload, these types of issues were inevitable. Each inspector/regional office would note violations in a chain establishment, not realizing a high risk violation might be occurring chain-wide, possibly due to a flawed food preparation technique or policy in use by the whole chain of restaurants. The problem could be corrected on an individual basis in one area, only to crop up in another area.

The limitations of the 44-item checklist of the 1976 code needed to be addressed as well. This method of inspecting, while very strong in the area of general sanitation is not known for its emphasis on areas of high risk. While critical violations are weighted more heavily than non-critical items, inspectors typically spend most of their time looking at structural issues rather than procedural issues. The Division needed to find a way to emphasize high-risk items, while still meeting the mandates of the 1976 code.

In 1997, the Environmental Health Division recognized that the food service worker-training program at that time was inadequate. With rapid growth at an astounding rate in the number of food related permits in Maricopa County (Figure 9), which meant more food service employment opportunities, there was also a need for increased food service worker testing. The new risk-based approach required a higher knowledge level among food service workers and management staff. The program needed to update the knowledge level of existing food service workers as well as to increase amount and availability of food service training offered.

Methods – To place expertise where it was most needed, the Special Programs area was expanded and modified to include supervisory level Environmental Health Lead Specialists (EHLS) responsible for

inspecting high-risk food service establishments and providing specialized education. Elderly, young and immune compromised individuals are at higher risk of acquiring foodborne illness and suffering serious effects. Therefore the Supervisory Care and Child Day Care Programs were improved with increased expertise in these areas. Another area of concern regarding associated risk involved large high-volume commercial food processors, which produce high volumes of food with specialized procedures and equipment. In late 1996, a food-processing program was created. The EHLSs responsible for these programs received special training and education in HACCP and other inspection techniques to be applied on inspection.

In addition to the changes in Special Programs, the Chain and Franchise Food Program was created in 1997 to address the specific needs and challenges associated with the inspection of these high-volume establishments. This program is a perfect example of how basic changes in organization can be beneficial for both industry and regulatory agencies. The new Chain Food Program consists of three EHSs and a supervisor, who are responsible for the routine inspection of a limited number of large chains. This allows the staff of the program to identify chain-wide problems and easily coordinate changes in policy or procedures on a chain wide basis. The chain/franchise establishments benefit in gaining a level of consistency and communication with the Department not possible with the old system of organization, while procedures on a chain wide level with high risk for foodborne illness could be identified and addressed.

Created in 1996 and refined with the changes in Division philosophy, the HACCP program provides field support and expertise in food science and safety for EHS's, industry operators and the public. The regional offices and Chain Food Program work closely with the HACCP program and refer a chain or establishment to that program for follow up and specialized training if necessary (See Filiberto's example below). The HACCP Program EHLS is responsible for evaluating and supporting the risk-based approach to food safety programs throughout the Division's food protection program and providing input and guidance whenever necessary.

The Division has also developed a system for risk assessment of various food establishments in the County by assigning each food service establishment to a risk category. In March of 1996, a Standard Operating Procedure (SOP) for Risk-based Inspection Frequency Requirements was formally issued to all staff. The new SOP established five categories of risk. The SOP correlates level of risk inherent in an establishment with inspection frequency (Table 6). Recently, these risk categories were added to each computerized record. Environmental Health Specialists now inspect food establishments one to four times per year according to the inherent level of risk.

The Division decided to emphasize critical violations on all inspections. Staff was retrained to spend the majority of their inspection time taking food temperatures, watching employee hygiene, and monitoring food flow throughout a kitchen. Critical items are documented whenever noted, non-critical items are noted, but not emphasized. Related to this issue the Division has provided leadership and a strong voice in lobbying the Arizona Department of Health Services to initiate adoption of a more modern food code based on the 1999 FDA recommendations (3).

With our new emphasis on high risk and increased knowledge of the science of foodborne illness, the food service worker program was changed to incorporate the demands of increased training as well as the need for new training requirements. Maricopa County's food service training consists of a booklet of critical food safety practices in five languages (Figure 10). Assessment is measured using a 25 question multiple choice exam, with a score of 80% required to pass. Testing is offered at the four regional offices. The food service worker training schedule was changed to increase the number of hours available for training. Before 1999, the hours of food service worker testing for these offices were sporadic. Since the beginning of 1999, the food service worker training schedule has changed to Monday through Friday from 8:00 a.m. to 4:00 p.m.

Until now, all food service workers were required to complete the Division food service worker testing only once; cards had no expiration. In January 1998, in order to increase employee awareness of and education in current food safety information, Chapter 7 of the Maricopa County Health Code was revised to include:

- renewal of all existing cards (without expiration dates) by January 1, 2001,
- a three year expiration date from date of issue for all new cards,
- a requirement that original cards be kept at each establishment for verification on inspection,
- a requirement for a full-time Certified Food Manager to be available for all establishments preparing open or potentially hazardous foods, by January 1, 2000.

Outcomes – Each newly refined or created special program has brought consistency to the inspection process and cohesion among regulatory programs and the food industry, while increasing in the quality and effectiveness of food protection (Figure 11).

The HACCP program has successfully provided all EHS staff with regular in-house HACCP training that consists of classroom instruction and fieldwork. Environmental Health Specialists have also received HACCP training from other governmental agencies such as the State of Arizona Department of Health Services and the U.S. Food and Drug Administration. Through the FDA's "Train the Trainer" Program, 18 EHSs within the Division have gained the knowledge to act as HACCP trainers to industry and regulatory personnel. This knowledge has been put to good use since these inspectors also incorporate HACCP training into their every-day duties.

The Chain Food Program has been very effective in regulation of food service on a chain-wide rather than individual location basis. The program has been recognized on a national level as indicated by the receipt of a National Association of Counties Achievement Award in 2000 (Figure 12). To illustrate the effectiveness of the Chain Food Program it is worthwhile to consider a case study: the Filiberto's chain in Maricopa County. The 16 Filiberto's restaurants in the County have an extensive Mexican food menu. Being distributed throughout the County, no more than two of these were inspected by the same EHS in a regional office. When the Chain Food program was formed, Filiberto's was one of the chains placed into it. Through regular inspection by the Chain Food staff, it was noted that this chain had widespread procedural problems with their standard food service procedures. Between 1996 and 1998, when the Chain Food Program began to operate at full capacity, the inspection scores at Filiberto's decreased significantly

(Figure 13). Chain Food EHSs, after becoming familiar with the procedures of the chain, learned what to focus on during inspections. They identified widespread, high-risk problems throughout the franchise: hand washing was not practiced regularly; potentially hazardous food was prepared by hand and cooled in large quantities in reach in coolers. This is a recipe for foodborne illness that needed to be remedied throughout all the Filiberto's restaurants.

Previously, these problems were dealt with on an individual basis; the Chain Food dealt with the problem on a chain-wide basis. They referred this chain to the EHLS of the HACCP Program. The HACCP Lead consulted with chain management, evaluated their recipes and food flow, and helped them identify the risks in their procedures. Critical Control Points were identified, and principles of HACCP were incorporated into their procedures. The HACCP Lead continued to evaluate the franchise over the next year. It can be seen that after the intervention and input of the HACCP program with this chain that the inspection performance for the franchise increased significantly (Figure 13). These improvements reflected a major change with respect to high-risk critical violations within the chain as reflected in a comparison of the amount of food embargoed at the chain over the last few years (Figure 14). This is an excellent example of how chain wide procedures, which might easily lead to a major foodborne illness outbreak, were identified in a proactive fashion and corrected through the use of innovative regulatory programs.

Prioritizing the risk of each food establishment has been very effective in improving our overall food protection program. Since 1997, the relative frequency of inspection for high-risk establishments has increased (Figure 15). Our field staff, by incorporating risk into their everyday inspection routine, are spending more time where they can do the most good. This has resulted in a dramatic increase in the amount of food embargoed as we emphasize high risk items such as food temperatures (Figure 16).

Adoption of a new food code in Arizona based on the 1999 FDA Model Food Code (3) is currently underway. This new code should be written into law in the fall of 2001. Maricopa County, as the largest food service regulatory authority in Arizona, provided strong leadership in the push for the adoption of this new code (see John A. Marcello letter of recommendation). With the implementation of the code in

Maricopa County, this will allow us to further refine our inspection programs to incorporate HACCP principles into our regulatory duties. This will also permit more flexibility with respect to the format of our inspection system, increasing the educational approach to food service regulation based on the modern FDA standards.

The old system of sporadic food service worker testing resulted in an average of 12.5 hours of testing available at each office per week. The change in schedule has increased the average total weekly hours at each office to 37.5, an increase of 300 percent. Therefore there has also been a significant increase in the number of students attending the testing sessions (over 50% more from 1997 to 2000; Figure 17). The monthly student number increased between 1998 and 1999, when the program changes took effect, to an average of 901 students per month. During the transition period since the Certified Food Manager requirement has been in effect, most food service managers have initiated the process to gain their certification. We expect the number actually certified will increase to more than 7,500 in the next year, as managers who have passed a certification exam obtain their ID cards

COMMUNICATION

ISSUE 3: COMMUNICATION

CHALLENGES

- **TOP DOWN MANAGEMENT APPROACH NEEDED REVISION**
- **KEEPING INDUSTRY INVOLVED**
- **LACK OF DATA AND COMMUNICATION TO HELP INSPECTORS IMPROVE THEIR PERFORMANCE**
- **LACK OF COMMUNITY INVOLVEMENT**

METHODS AND OUTCOMES

- **EMPLOYEE SATISFACTION COMMITTEE AND SURVEYS HELP CREATE A BOTTOM UP APPROACH TO DECISION MAKING**
- **EXCELLENCE IN FOOD SAFETY AWARD RECOGNIZES SAFE FOOD OPERATIONS**
- **INTERNAL AND EXTERNAL NEWSLETTERS INCREASE COMMUNICATION**
- **INTERNET POSTING OF INSPECTIONS AND DEPARTMENT MATERIALS INCREASES ACCOUNTABILITY AND PUBLIC AWARENESS**
- **QA/QC PROGRAM PROCESSES DATA TO ALLOW ASSESSMENT OF PROGRAM EFFECTIVENESS**
- **COMMUNITY AWARENESS PROGRAMS INCREASE MEDIA COVERAGE, COMMUNITY INVOLVEMENT AND FOOD SAFETY AWARENESS.**

Issues –Environmental Health Specialists did not feel involved in decision-making processes that determined the direction of the Division. Lack of channels for feedback coupled with poor communication among and between various components of the Division, resulted in feelings of dissention and apathy. There were no awards or incentive programs established to recognize outstanding achievement, or a job well done.

In any jurisdiction, absence of mutual respect and good working relations between industry and the regulatory community may prove to be self-defeating for both. The common objective of food safety and protecting public health may become secondary. An introspective look at the success of the food safety program revealed increased political opposition from industry organizations to key food safety initiatives and actions. Professional organizations, such as the Arizona Restaurant Association (ARA), sometimes found themselves lacking food safety leadership and guidance.

The Division's capability of collecting and efficiently utilizing data was inadequate. Access to data was limited and relevance of statistical information was virtually useless to management due to untimely and inaccurate data entry. Official record storage, retrieval and maintenance were accomplished using a tedious and inefficient paper indexing batch-filing procedure.

Growth in the county and associated regulatory responsibilities required increased numbers of employees within the Division. The Training section needed to recruit high quality individuals who could be easily and rapidly trained to keep up with this growth and our regulatory responsibilities. Training within the program needed an update to incorporate a risk-based approach to our routine. Standardization of existing staff towards a risk-based inspection procedure, rather than a uniform inspection procedure, also became extremely important at this time.

Due to the limitations of a paper-based inspection system paired with an antiquated computer system, generation of program statistics related to quality of work was nearly impossible. The system in place in 1996, while allowing for tracking of inspection dates and business information did not allow for tracking of violation frequencies, inspection times, or other potentially important data.

While most responsibilities for the food service regulatory authority deal with supervision of public food service facilities, most meals are prepared and served within the home. A quality food protection program must recognize this and strive to help increase public awareness of food safety, with a goal of preventing foodborne illness wherever it may occur.

Challenges – To better increase lines of communication and recognize the importance of increasing employee morale, the Division had to apply its proactive approach to its own staff, allowing their input into development and implementation of new and innovative programs.

The Division had to increase communication with the food service industry. Rather than having a regulator vs. business relationship with the industry, these two key players in food safety had to work together. The Division would supply expertise and leadership with regards to food science and food safety, and industry would express their voice as well.

Changes needed to be made to allow measures of quality rather than just quantity of work. The data available due to the automation of the inspection process needed to be incorporated in to a self-evaluatory program.

Many jurisdictions use grade cards posted on site to help keep the public informed regarding the level of food safety at a particular food service establishment. One weakness in this system is that establishments often gain a 'good grade' through re-inspection after they correct the major problems noted on routine inspection. The grade card does not give the public the complete history of the establishment, but a possible false sense of security. Operators often focus on this grade card, losing interest in the food safety principles behind it. The Division needed to find a way to make information more accessible without making it misleading. We needed to make a concerted effort to increase our transparency with respect to public information, increase our community outreach, and increase our response and accountability with respect to citizen's complaints.

Methods – In 1998, to address employee morale challenges, the Division created an Employee Job Satisfaction Committee. The Committee was empowered to develop clear Division goals and objectives to improve overall employee satisfaction. The Committee comprised representatives from all facets of the

Division, with the highest representation from field EHSs. The committee developed the 1998 Employee Job Satisfaction Improvement Plan, which established clear goals and objectives for the Division with designated deadlines.

The objective was to empower Division employees by establishing additional opportunities for staff at all levels to have effective input to creating recognizable improvements in programs. Improving communication system's capabilities and promoting increased positive interactions between staff and management was the most appropriate method to increase staff involvement. Action committees and focus groups such as the Computer Focus Group, Employee Job Satisfaction Committee and Employee Awards Committee were formed to develop recommendations for program planning that encompassed customer, employee, and management concerns. In addition, Environmental Health employees were encouraged, during the employee evaluation process, to develop individualized work plans that incorporated desired objectives for personal and professional growth and well-being. This information was reviewed and discussed with the employee's supervisor in a one-on-one evaluation process.

Employee satisfaction is now measured within the Department and Division through the use of a Job Satisfaction Survey. This survey measures employee approval on a sliding scale. A measure below 5.0 reflects negatively on the Division, a measure above 5.0 reflects positively on the Division.

In the new millennium, regulators of the food service industry must recognize that it is important to work with industry as well as regulate them. The Division has initiated numerous programs to gain industry involvement in food safety. These efforts include:

- Development of the 'Excellence in Food Safety Award' given by the Department to recognize food service establishments who have made a commitment to protecting consumer health through strict food safety practices (See Appendix).
- Distribution of a newsletter to food service establishments containing pertinent food safety and regulatory information (see Appendix).
- Increased participation in regulatory/industry partnerships.
- Implementation of an industry survey to help the Division meet the needs of the industry it regulates.

The ‘Excellence in Food Safety Award,’ was designed in 1999 to recognize food and beverage facilities within Maricopa County that are performing beyond the current regulatory requirements of the County in developing risk-based, in-house sanitation and food safety programs. Each applicant for the award is required to submit information detailing the in-house sanitation/food safety program. Award submittals include a completed submittal form, a complete menu, an establishment outline, and additional supporting evidence. In determining award winners, submittals are reviewed by a committee, which evaluates the establishment’s past history, risk-based food safety program, crisis management plan, food traceback system, pest control program, consumer advisory program, employee education system, and employee illness policy. The committee consists of representatives from industry, the public, the media, and the Department.

In 1998, with the signing of a Food and Drug Administration Partnership Agreement, the HACCP Program represented the Division in the HACCP Alliance Pilot Program. The partnership consists of the Food and Drug Administration (FDA), the State of Arizona Department of Health Services, industry representatives, and five counties within the State of Arizona. The HACCP Alliance is a nationally recognized HACCP initiative to study the application of HACCP principles to the retail food industry and is in the process of evaluating a variety of food safety management systems. This initiative has already provided invaluable industry–regulatory HACCP training and insight into "real world" HACCP application.

The Alliance program has initiated a noticeable change in the way inspectors and industry view food safety management versus regulatory roles. Inspectors utilizing HACCP techniques focus on the real regulatory objective of food protection. The Alliance has initiated the innovative ideology of "partnering with industry" in a common determination of food safety objectives, and reduction of risk factors through managerial control. EHS's are currently working in the field with industry to verify food safety management practices based on risk factors. This unique project includes continuing development of HACCP interview techniques, menu review and program evaluation that may be used to develop future national standards and practices. Individualized HACCP forms are developed by industry with regulatory input that reflects a comprehensive, scientifically sound food safety management system, incorporating

HACCP principles and emphasizing managerial control over risk factors. Industry response to this pilot program has been overwhelmingly positive with four large national chain restaurant organizations becoming part of the Alliance since its inception.

The Alliance, a Division newsletter (see Appendix for examples), produced semiannually and distributed to food service establishments in the County, was started in 1998 to provide the industry with an informative and interesting medium to discuss up-to-date food safety issues. The newsletter, sent to over 11,500 county permit holders, contains articles written by Division personnel relating to important items such as HACCP and emerging pathogens in a non-technical format that is reader friendly and informative. The newsletter also contains a multitude of food safety tips, quizzes, and information on food safety web sites and contacts. The Division also uses the newsletter to distribute important information related to changes in policy, code, and training information, such as the changes that occurred in the Food Service Worker codes (see below).

Our Division has worked very closely with the Arizona Restaurant Association (ARA) in providing education for their members, resources for food safety information and equipment; and we have actively pursued their representation in the Food Code Task Force, Strategic Planning Group, and industry-regulatory alliances, such as the HACCP Alliance. The Division has requested that information be published or sent by the Arizona Restaurant Association (ARA) to members advising them of critical food safety issues and announcements. Hazard Analysis Critical Control Point workshops and training have been offered to individual and chain restaurateurs who field EHSs found were willing to explore new concepts of obtaining managerial control over foodborne illness risk factors. Reflecting these efforts, David Ludwig, the Division Manager, received the ARA's '1999 Friend of the Industry Award.'

In 1999 the Division recognized a need to use the industry's input as an evaluatory tool within the food protection program. A customer survey was distributed to randomly selected full service food facilities within the County. This survey measured customer satisfaction in 10 areas (on a sliding scale from poor to excellent) and allowed for individual comments as well.

Division EHSs employ powerful notebook computers in the field, using the Remote Inspection System (RIS) software program that was developed and refined in house, to enter all information generated during fieldwork (business changes, new owners, inspections, and foodborne illness reports) into the computers. The information collected is uploaded to the upgraded network system, approved by the assigned supervisor, and sent to the main Division offices where database tables are maintained.

Community involvement efforts in the Division include encouraging increased media coverage, posting information on the Internet, and increasing the Division's public outreach. The Division has also made an effort to increase the convenience with which the public may gain awareness of a food service establishment's inspection history.

To keep the public informed the Division utilizes the Internet to increase the level of public information available regarding food safety. To view inspection information the user logs on to http://envquery.maricopa.gov and all inspections for the last two years are available for view. The County's Environmental Services web sites http://www.maricopa.gov/envsvc/default.asp are used not only to post inspection histories but also general information regarding food safety for the public, access to forms and informational booklets used by the Department, and other links to related food safety sites.

In another effort to increase public awareness, the Department made a serious commitment in 1999 to launch its own food safety education campaign. The Serve it Safe Arizona Alliance was created in 1999 by the Division to develop a broad base coalition of private and public partners promoting food safety in the home. This campaign started within the County but has since spread statewide with Maricopa County Environmental Services spearheading the effort. The main goal of this campaign continues to be spreading the message of safe food handling practices at home to communities all across Maricopa County and Arizona.

Another aspect of community involvement that has been improved is the method used to take and log citizen's complaints. The first step in the EMS complaint system is a unified phone complaint intake. One phone number is used for all complaints; operators record the basic information, assign a case number, and direct the call to the proper office or program, where the complaint will be investigated.

Outcomes – The methods used to meet the challenges with respect to communication at all levels have been very effective. Decisions are now made with input from the bottom to the top. Employees are evaluated according to their individualized annual work plan. Employee acceptance of these programs is reflected in the level of satisfaction expressed through the biannual Job Satisfaction Survey. In 1997, employee satisfaction with the Division resulted in a score of 4.54, representing overall employee dissatisfaction. This score rose to 5.35 in the 1999 survey, indicating that the Division's initiatives in this area have reflected employee input.

The Division has received numerous compliments on the newsletter and the customer surveys distributed showed an overwhelming positive response. The response to the survey (Table 7) indicated an overall rating of good or excellent in 94% of all responses, indicating that industry supports the changes which are being made in our food program. Comments made on the surveys also confirmed this belief. Many of the comments alluded to our EHS's polite and professional manner in aiding industry to resolve their food safety challenges.

The EMS system has provided EHS's and managers with the ability to quickly generate reports and statistics useful in managing a district or regional office. An office manager or EHS can develop categorized, sorted lists of food establishments within selected boundaries with a few clicks of a mouse. Virtually, any conceivable search criteria can be used when extracting information from the database using the EMS software.

The Remote Inspection System (RIS) provides EHS's with all related inspection, permit and business information for food establishments within their assigned district, allowing them to be more efficient, knowledgeable and productive in performing their duties. Standardized correction and violation statements, available in both English and Spanish, reduce inspection time, improve work quality and eliminate the need for hand written inspections. The new inspection report is easy to read, and provides a large quantity of supplemental/informatory information than a hand written report. Violations noted on the report are prioritized by risk, with critical violations noted before non-critical items. The industry has

confirmed our belief that the new inspection report is superior to the old through the industry survey; 96% of respondents rated our computerized inspection report as good or excellent (Table 7).

The newly accessible data allows the Division to track the frequency of critical food safety violations (e.g. improper cooling) identified during risk-based inspections. It is possible to determine the number of inspections conducted in each regional office, district, and the Division as a whole, per year or month. The average time taken to conduct an inspection and the average score can be easily computed. The frequency of each violation is marked is computed and a percentage of the total is determined for each violation. These factors can be determined for each district EHS, regional office, and the Division (Figure 18). This allows the QA/QC section to evaluate the work of each EHS with ease. Outstanding performers, as well as those who need assistance to meet Division inspection averages can be noted. Training and/or standardization exercises can then be used to assist those who fall below Division standards. These data have also proven useful to individual inspectors for self-correction. For example, if they noted their average frequency for writing food temperature violations was below that for the Division or regional office, they can reevaluate how they monitor temperatures in the field.

The statistics generated by the QA/QC program can also be used to monitor program effectiveness. Risk categories (as noted above) have been incorporated into the EMS/RIS computer system, allowing statistical analysis by risk category. It is now possible to identify inspection trends in scoring or occurrence of foodborne illness risk factors according to risk categories. This is another tool that assists the Division in risk assessment.

With an emphasis on critical, high risk violations on routine inspection over the last couple of years it is important to monitor violation frequency data to determine if the change in approach has an actual effect on the food safety at food service establishments in Maricopa County. In looking at a critical violation frequency table for the last three years it can be seen that the incidence of critical violations noted on routine inspection generally decreased over the last three years, even though our field staff now emphasize critical violations in the field (Figure 19). This may indicate that the Departments changing

philosophy, with an emphasis on risk, has resulted in a significant decrease in the risk of foodborne illness risk factors in the County because food establishments are performing closer to code requirements.

Information regarding routine inspections, good and bad food safety practices, and legal actions are now discussed weekly on two local TV news programs, and published on a weekly basis in the Arizona Republic, the largest newspaper in the state. Examples of this coverage are included in multimedia format on the CD-ROM accompanying this document. In becoming the **first** local jurisdiction in the United States to post inspections on the Internet, the Department received a NACo achievement award in 1999 (Figure 20), recognizing the benefits of such a system over the use of grade cards.

The food establishment inspection review site averages approximately 6,000 hits and 70,000 pages served per month. Posting inspections on the Internet also has the added effect that restaurants are maintaining a higher level of sanitation on their own to avoid having poor reports viewed by the public. Many restaurant owners within the County have expressed this verbally to inspectors when they are on site. Industry satisfaction with the new inspection form can also be noted in the Industry Survey (Table 7). Food service establishments may now see how having higher standards in food safety, which leads to better inspection performance, enhances their public image and business potential. On the whole, more than 2.8 million Arizona residents received our food safety messages through Serve it Safe Arizona and our various media outlets in 1999 and 2000. Through the leadership of Maricopa County's community outreach program, the Maricopa County Board of Supervisors and the Governor of Arizona proclaimed September of 2000 as 'Food Safety Month.' The theme for 2000 was 'Be Smart, Keep Food Apart – Don't Cross Contaminate.'

The Serve it Safe Arizona program has resulted in:

- Six local television stations producing and airing segments on safe food handling practices at home, both in English and in Spanish.
- The Division providing over 700 personnel hours in staffing food safety booths at local events, including a major league baseball game, a health fair, and family fairs. Display tables being set up at local retail grocery outlets to provide food safety information to consumers. At these displays, over 400

metal stem food thermometers were given away as prizes to those who participated in food safety contests. One local grocery chain, Basha's, printed over ten million grocery bags with food safety messages. Safeway Supermarkets and local cooperative extension offices provided the campaign with thousands of Fight BAC brochures to distribute. Publicity generated by this event resulted in numerous TV, radio, and newspaper stories reaching over two million residents in the County.

- The Division coordinating coloring contests for local elementary school children. Over 50,000 students participated in 2000.
- The Divisions participating in well over 100 public presentations on food safety issues.

The Division also conducted a call-a-thon event with a local television channel to answer questions on food safety. This segment aired for two hours with more than 300 calls and 8094 hits on our web site. These segments were viewed by more than 400,000 viewers according to station KPNX, in Phoenix. A live online chat with our Division Manager produced over 32 pages of information.

The new complaint system has had a great impact on the Division's customer service performance. All complainants get to the correct program or office more quickly. There is no chance of losing or misplacing a complaint. Complaint investigations are accountable, since they can be and are routinely monitored by supervisors to insure validity, timeliness, and correct resolution.

CONCLUSION

The food protection program of the Maricopa County Environmental Health Division has demonstrated sustained excellence over the last five years. While the program has been recognized on a national level for it's innovative and proactive programs in this area, these programs are constantly re-evaluated and improvements are made as necessary. Over the past five years, the Division has overcome a major obstacle with respect to resources, while still improving it's food program on an annual basis, especially in the areas of risk assessment and community involvement. Areas of weakness are identified, programs are developed and implemented, all while maintaining a cost-effective system as mandated by County Administration. This sustained excellence, along with the improvements discussed in this

document, have demonstrated Maricopa County Environmental Health as a worthy candidate for the 2001 Samuel J. Crumbine Consumer Protection Award.

REFERENCES

1. U.S. Centers for Disease Control and Prevention (2000), "Outbreaks of *Salmonella enteriditis* Infection Associated with Eating Raw or Undercooked Shell Eggs – United States, 1996-1998," *Morbidity and Mortality Weekly Report*, 49(4): 73-79.
2. U.S. Department of Health, Education and Welfare (1978), *Food Service Sanitation Manual Including A Model Food Service Sanitation Ordinance, 1976 Recommendations of the Food and Drug Administration,* Washington, DC: Food and Drug Administration.
3. U.S Department of Health and Human Services (1999), *1999 Food Code,* Washington DC: Food and Drug Administration.

Figure 1: Map of Arizona and Maricopa County **BACK TO PAGE 2**

Revenue Source	Actual Revenue
Regular Permits	$4,193,700.00
Plan Review	$358,300.00
Food Service Worker/Manager Program	$500,100.00
Family Day Care/90 Day Peddler	$113,400.00
Special Event Program	$125,400.00
Total	$5,290,900.00

Table 1: Division Revenue Breakdown Fiscal Year 2000 **BACK TO PAGE 3**

FEE SCHEDULE - Permits, Inspections, Plans Examination

Permit Required	**2 Yr. Fee**
Bakery	420.00
Bottled Water & Beverage Plants	500.00
Chemical Toilets	3.10/unit
Eating & Drinking Establishment	
(0-9 Seating Capacity)	290.00
(10+ Seating Capacity)	520.00
Food Catering	380.00
Food Jobber	310.00
Food Processor	370.00
Ice Manufacturing	540.00
Landfill	900.00
Meat Markets	390.00
Pet Shops	210.00
Public Accommodations	280.00
Retail Food Establishments	
Grocery	300.00
Damaged Foods	410.00
Refrigerated Warehouse/Locker	580.00
Hydro Therapy Pool	150.00
Wading Pool	150.00
Swimming Pool	200.00
Trailer Parks	72.00
	+2.20/space
Vending Machines	190.00
Water Transportation	80.00
	1 Yr. Fee
Food Peddler	120.00
Mobile Food Unit	175.00
Senior Citizen Center Food Service	200.00
Food Banks	100.00
Day Care Center Food Services	135.00
Push Cart	105.00
School Grounds	75.00
Group Homes	320.00
Service Kitchen	70.00
School Food Service	260.00
Miscellaneous Food	70.00
Miscellaneous Fees	
Eating and Drinking (Seasonal 120 days)	190.00
Food Peddler (90 day)	70.00
Delinquency Fees (Permits) to be charged	
when annual permit fee is delinquent	
Over 30 days	30.00
Over 60 days	50.00
Food Service Worker License	12.00
Food Service Manager License	12.00
Food Service Worker/Manager License Renewal	12.00

Table 2: Fee Schedule (1 of 2)

Plan Review Fee Schedule	**INITIAL**	**MAXIMUM**
Eating & Drinking Establishment (0-9 Seating Cap.)	250.00	750.00
Mobile Food Units	65.00	65.00
Food Establishments	350.00	750.00
Pet Shops	175.00	375.00
Public Accommodations	300.00	630.00
Schools Food Service	350.00	750.00
School Facilities other than Food (Grounds)	250.00	750.00
All Other Plans (Minor Remodels)	150.00	750.00
Design/Build Plan Submittal (Requires Prior Approval)	Double Plan Review Fee	
Phased Plan Submittal (requires prior Administration approval)	Double Plan Review Fee	
Expedited Plan Review Fee is twice the fee for that category. (Requires prior Administration approval)	Double Plan Review Fee	

Table 2: Fee Schedule (2 of 2) **BACK TO PAGE 3**

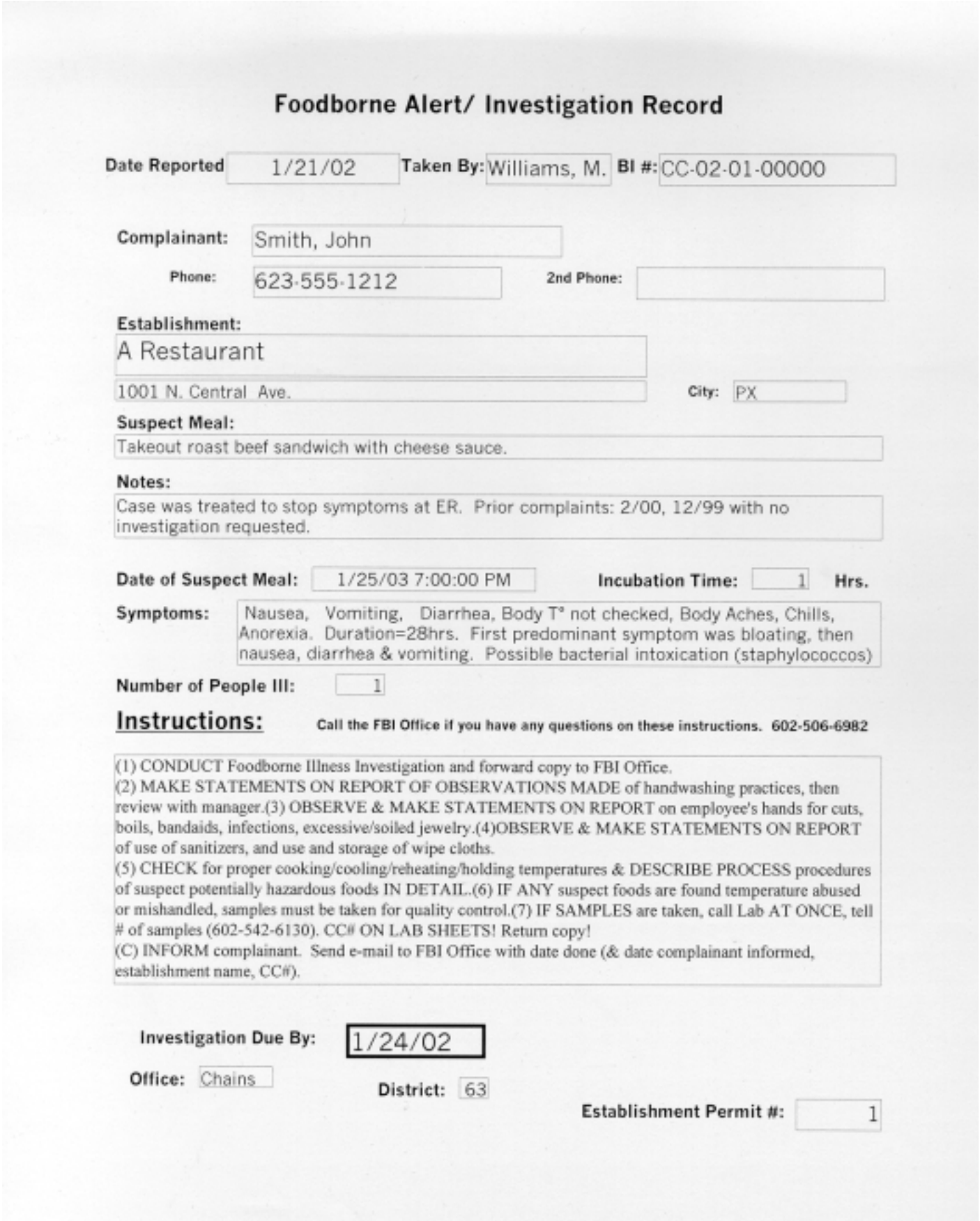
I. Permit or Action	II. Number
Food Establishments	16,177
Swimming Pools	8,304
Family Day Cares	1,804
School Grounds	857
Trailer Parks	547
A. Public Accommodations	490
Pet Shops	213
Vending Machine Companies	90
Chemical Toilet Companies	17
Complaints Received	6,745

Table 3: Maricopa County Permitted Facilities and Complaints **BACK TO PAGE 3**

1. Permit or Action	**Number**
Food Establishments	278
Swimming Pools	214
School Grounds	6
Trailer Parks	19
B. Public Accommodations	29
Pet Shops	1
Complaints Received	133

Table 4: District 32 Permitted Facilities and Complaints **BACK TO PAGE 3**

Figure 3: 1997 NACO Achievement Award for 'Foodborne Illness Database and Tracking' **GO BACK**



Foodborne Alert/ Investigation Record

Date Reported 1/21/02 **Taken By:** Williams, M. **BI #:** CC-02-01-00000

Complainant: Smith, John

Phone: 623-555-1212 **2nd Phone:**

Establishment:
A Restaurant

1001 N. Central Ave. **City:** PX

Suspect Meal:
Takeout roast beef sandwich with cheese sauce.

Notes:
Case was treated to stop symptoms at ER. Prior complaints: 2/00, 12/99 with no investigation requested.

Date of Suspect Meal: 1/25/03 7:00:00 PM **Incubation Time:** 1 **Hrs.**

Symptoms: Nausea, Vomiting, Diarrhea, Body T° not checked, Body Aches, Chills, Anorexia. Duration=28hrs. First predominant symptom was bloating, then nausea, diarrhea & vomiting. Possible bacterial intoxication (staphylococcos)

Number of People Ill: 1

Instructions: **Call the FBI Office if you have any questions on these instructions. 602-506-6982**

(1) CONDUCT Foodborne Illness Investigation and forward copy to FBI Office.
(2) MAKE STATEMENTS ON REPORT OF OBSERVATIONS MADE of handwashing practices, then review with manager.(3) OBSERVE & MAKE STATEMENTS ON REPORT on employee's hands for cuts, boils, bandaids, infections, excessive/soiled jewelry.(4)OBSERVE & MAKE STATEMENTS ON REPORT of use of sanitizers, and use and storage of wipe cloths.
(5) CHECK for proper cooking/cooling/reheating/holding temperatures & DESCRIBE PROCESS procedures of suspect potentially hazardous foods IN DETAIL.(6) IF ANY suspect foods are found temperature abused or mishandled, samples must be taken for quality control.(7) IF SAMPLES are taken, call Lab AT ONCE, tell # of samples (602-542-6130). CC# ON LAB SHEETS! Return copy!
(C) INFORM complainant. Send e-mail to FBI Office with date done (& date complainant informed, establishment name, CC#).

Investigation Due By: 1/24/02

Office: Chains **District:** 63

Establishment Permit #: 1

Figure 4: FBI Alert Form BACK TO PAGE 5

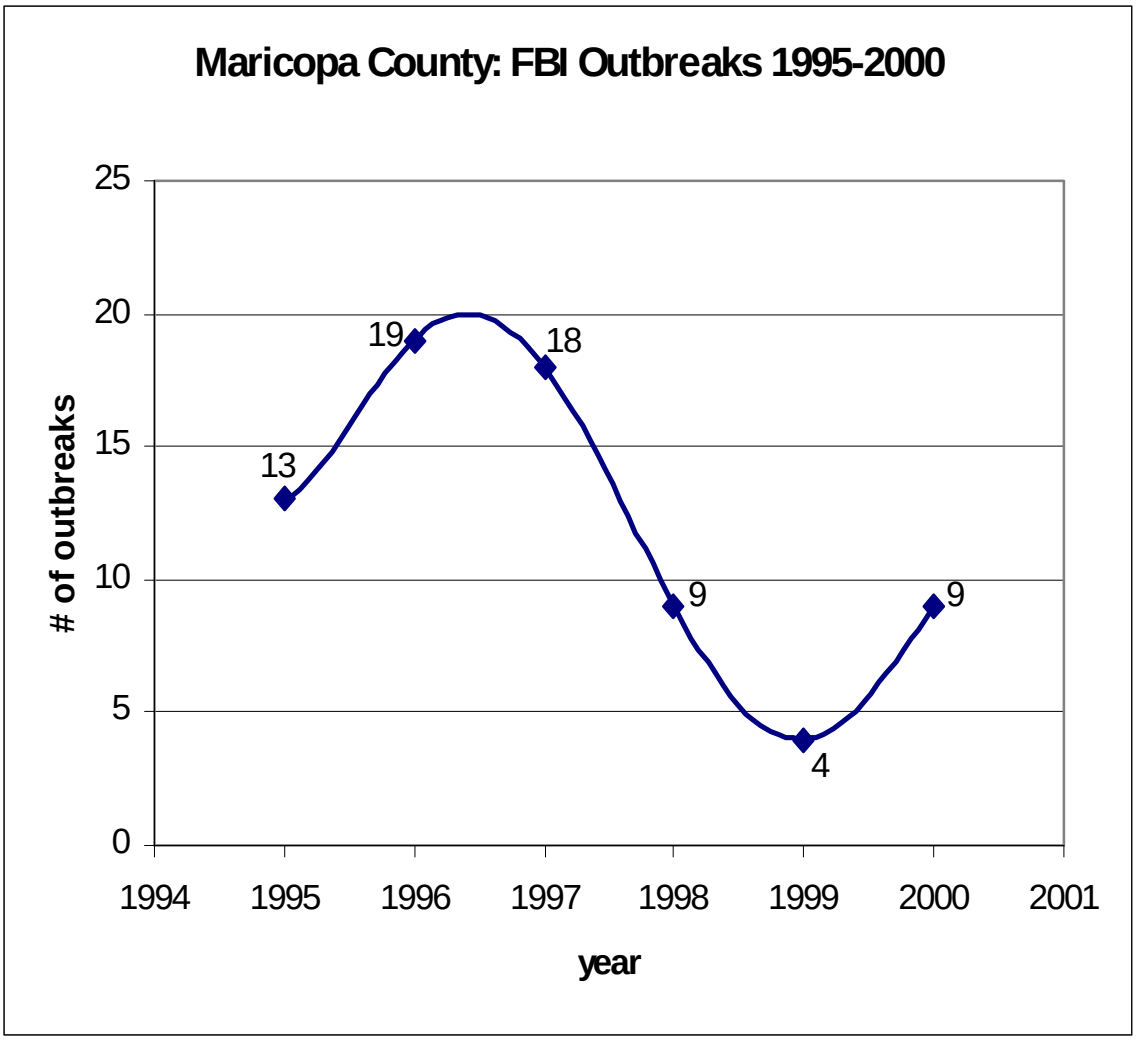


Figure 5: Outbreaks Declared in Maricopa County 1995 - 2000 BACK TO PAGE 6

Maricopa County Environmental Health
Legal Action Report
1998-2000

III. Legal Actions	1998	1999	2000
Warning Letters	107	286	335
IV. Revocations	12	25	45
Cease & Desist	17	24	33
Citations	28	16	61

Table 5: Legal Actions Taken 1998 – 2000 **BACK TO PAGE 7 OR PAGE 8**

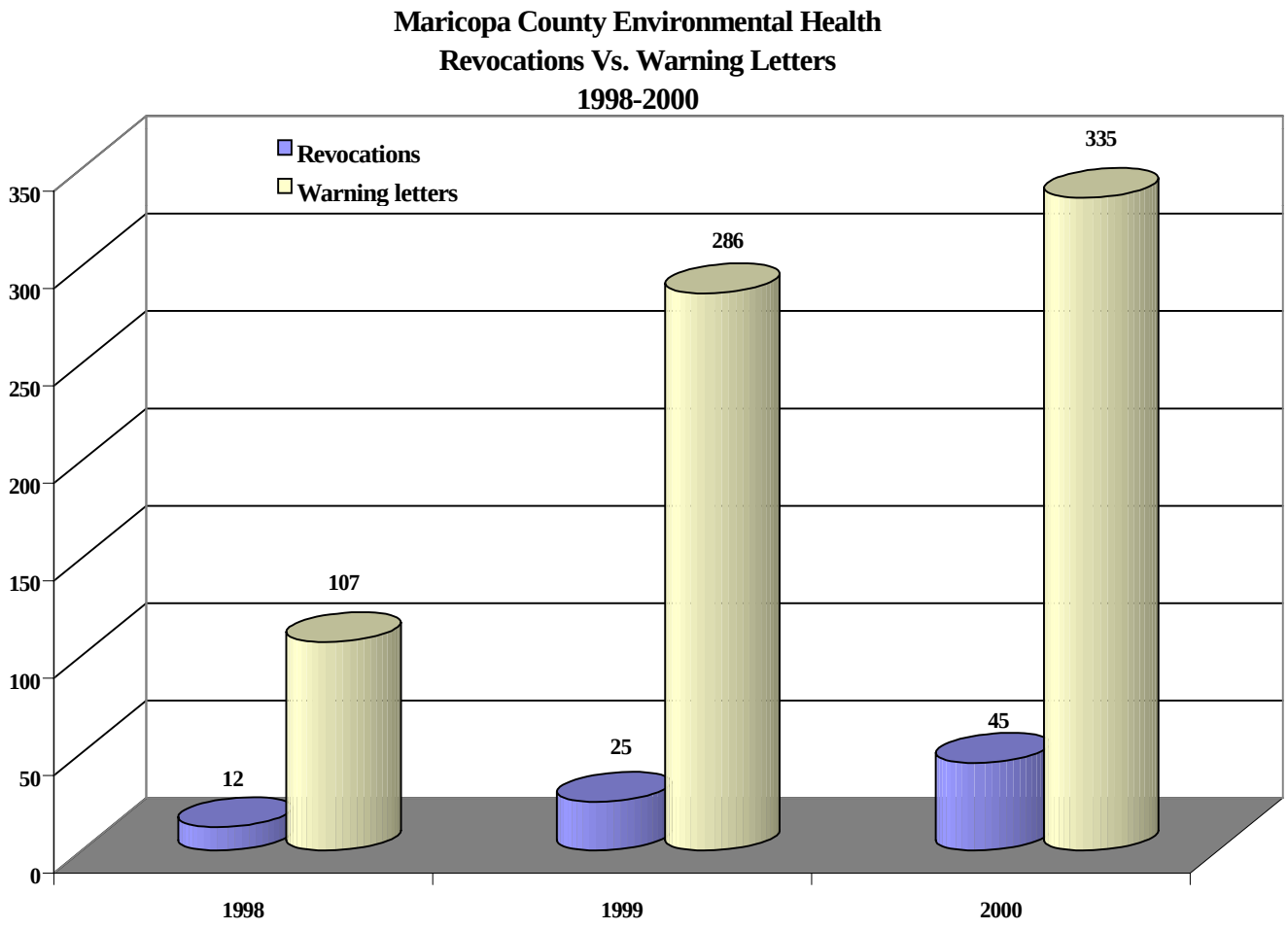


Figure 6: Warning Letters Sent vs. Revocation Actions Taken **BACK TO PAGE 8**

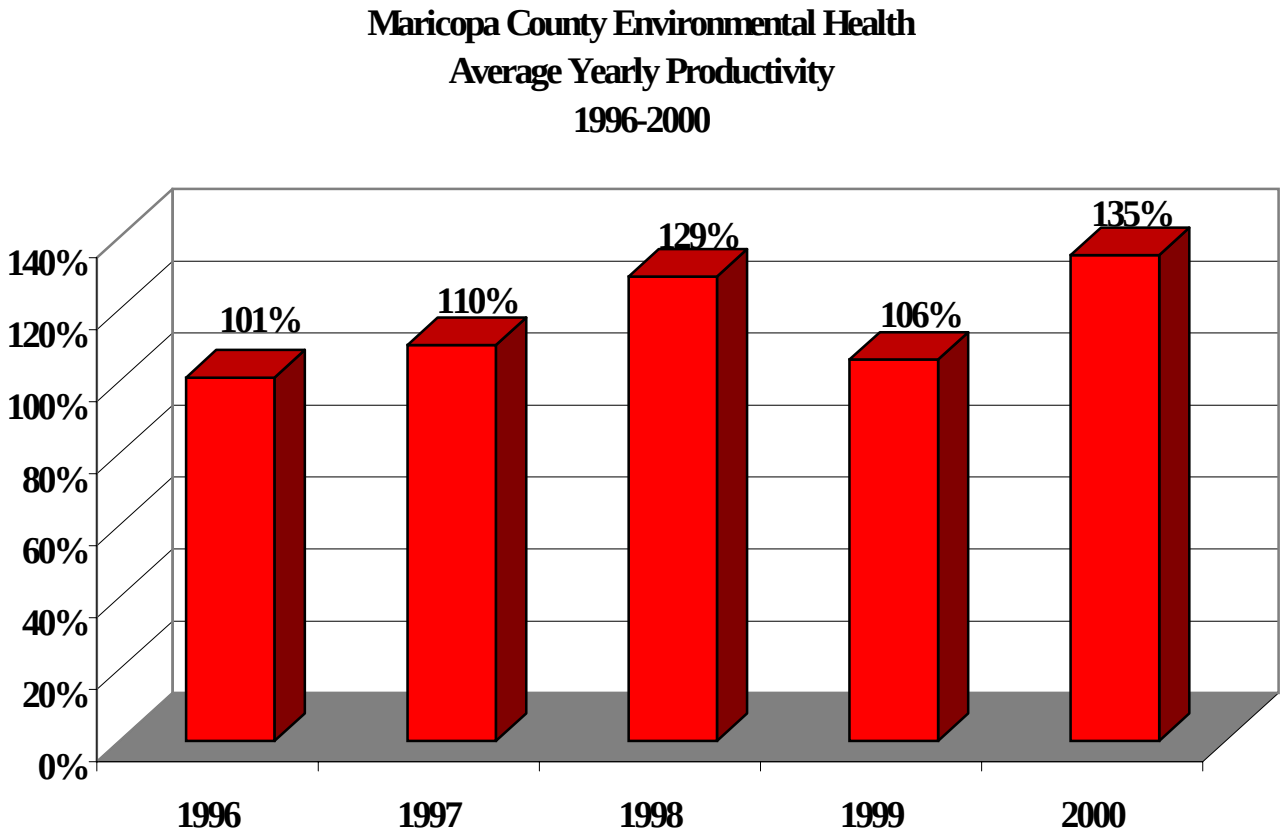


Figure 7: Division Productivity 1996 - 2000 **BACK TO PAGE 12**

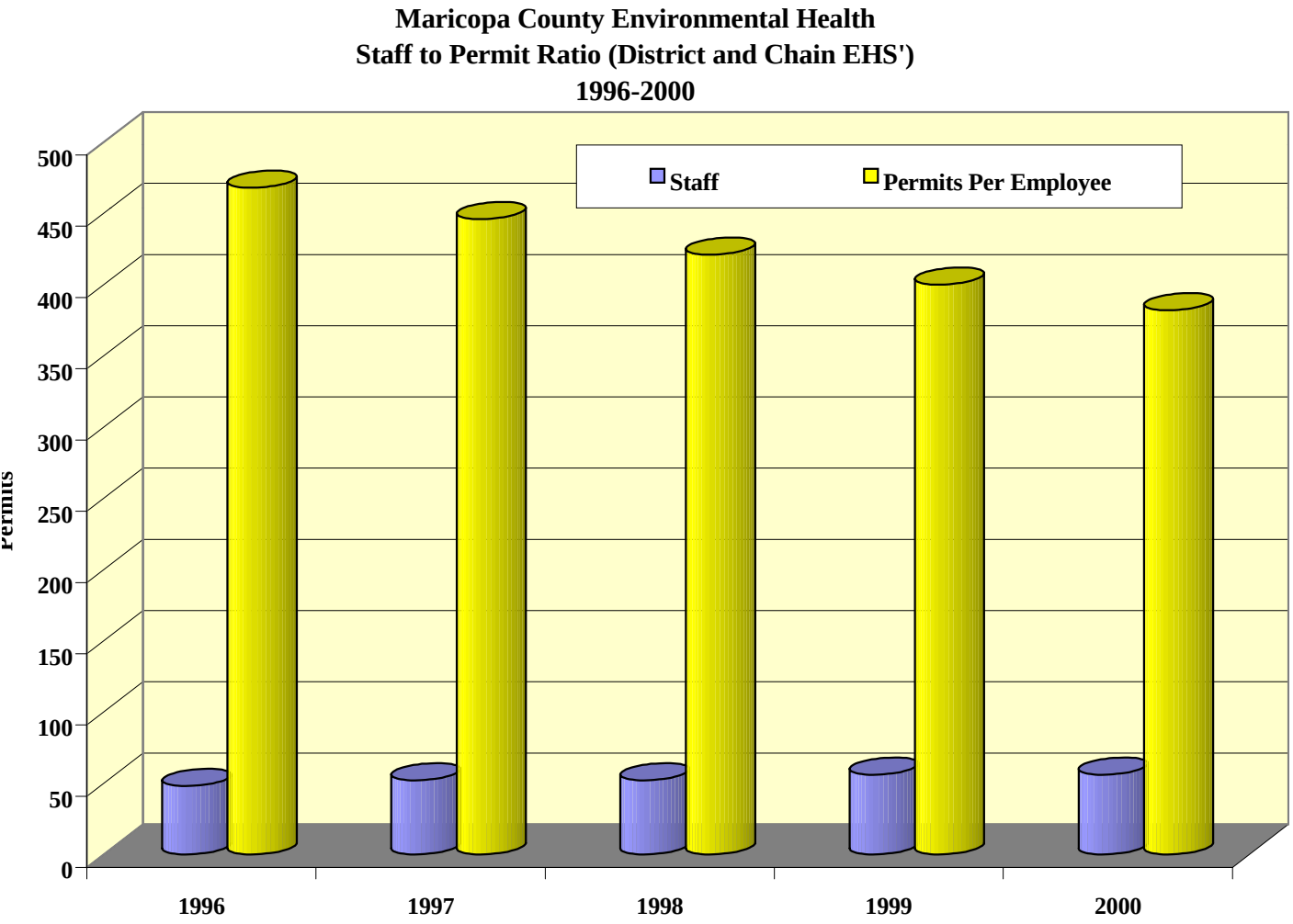


Figure 8: Staff to Permit Ratio (District and Chain EHS') 1996 –2000 **BACK TO PAGE 12**

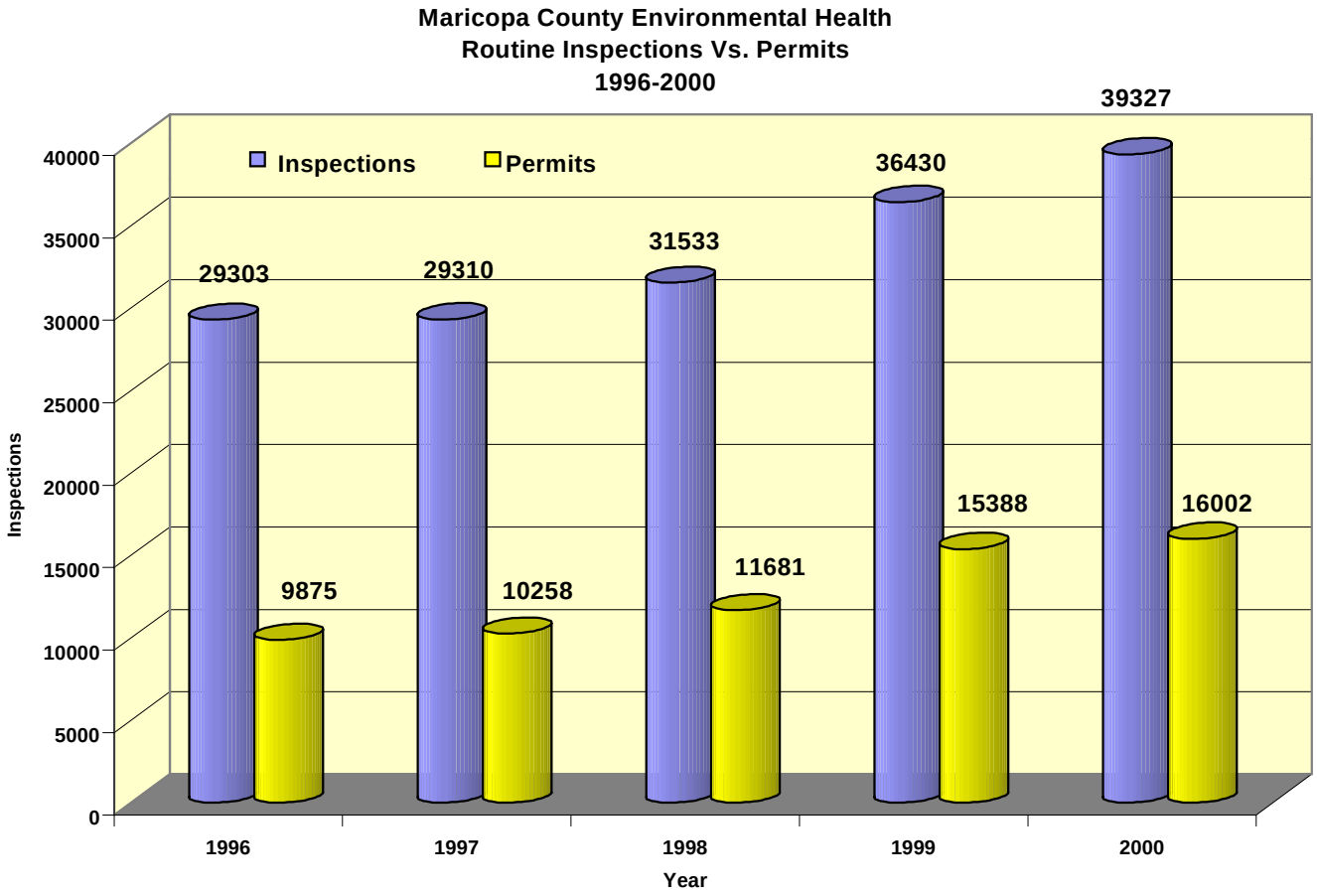


Figure 9: Inspections Done and Number of Food Establishments 1996-2000 **GO TO PAGE 14**

Risk Category	Examples	Inspection Frequency
1	***A. Bar with No Food Service*** Seasonal Food Operation Miscellaneous Food Permit	2 x year
2	Limited Menu Restaurant Full Service Bakery Retail Food Store	3 x year
3	Fast Food Restaurant Deli School Cafeteria	3 x year
4	Full Service Restaurant Commercial/Industrial Cafeteria Food Processing Plant	4 x year
5	Advanced Preparation Restaurant Hospital Cafeteria Food Catering Establishment	4 x year

Table 6: Risk Based Inspection Frequencies **BACK TO PAGE 16**

Figure 10: Food Service Worker Booklets Available in Maricopa County **GO TO PAGE 16**

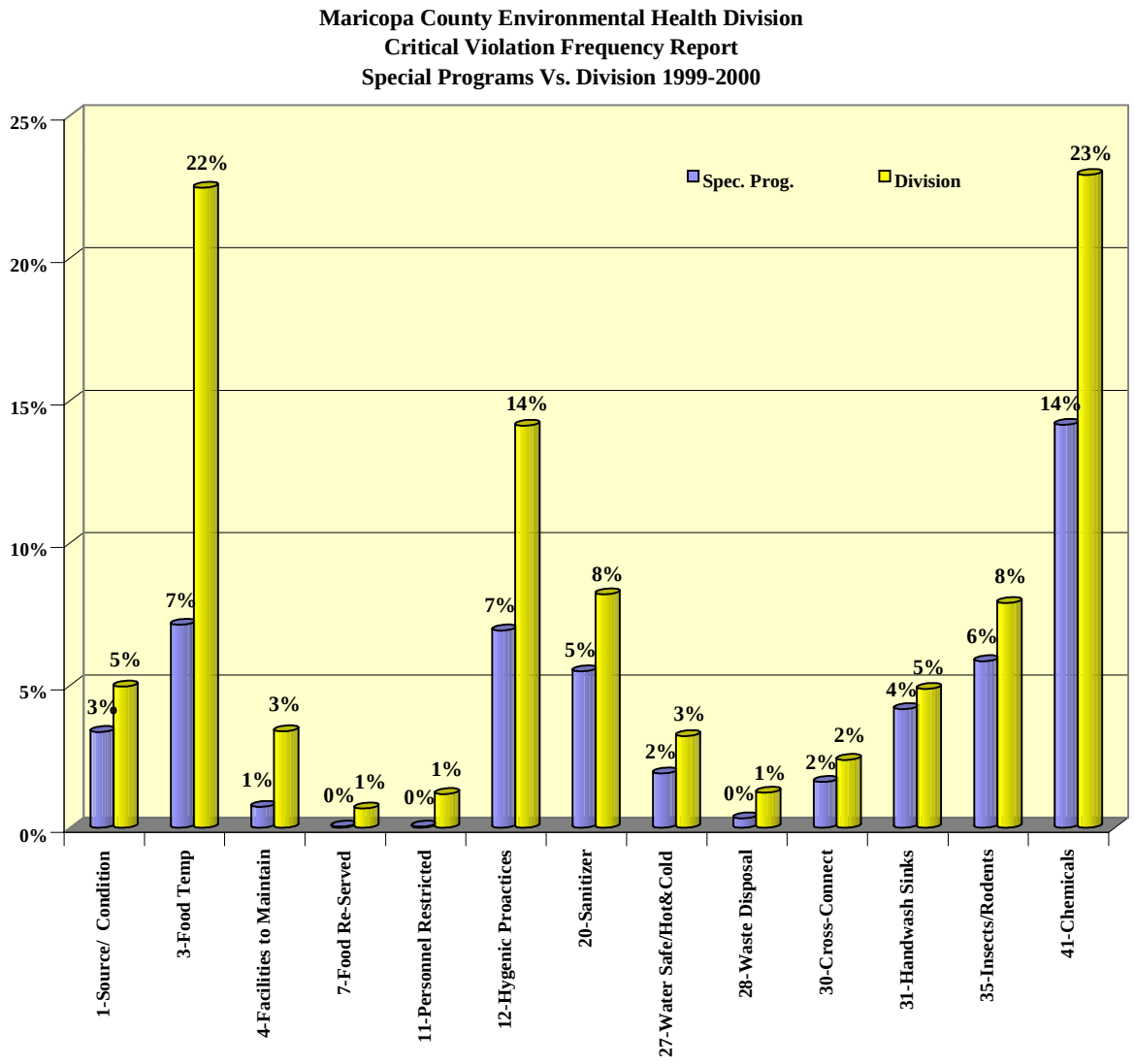


Figure 11: Special Programs Critical Violation Frequencies vs Division 1999-2000 **GO TO PAGE 17**

Figure 12: 2000 NACO Achievement Award for 'Chain Food Program' GO TO PAGE 17

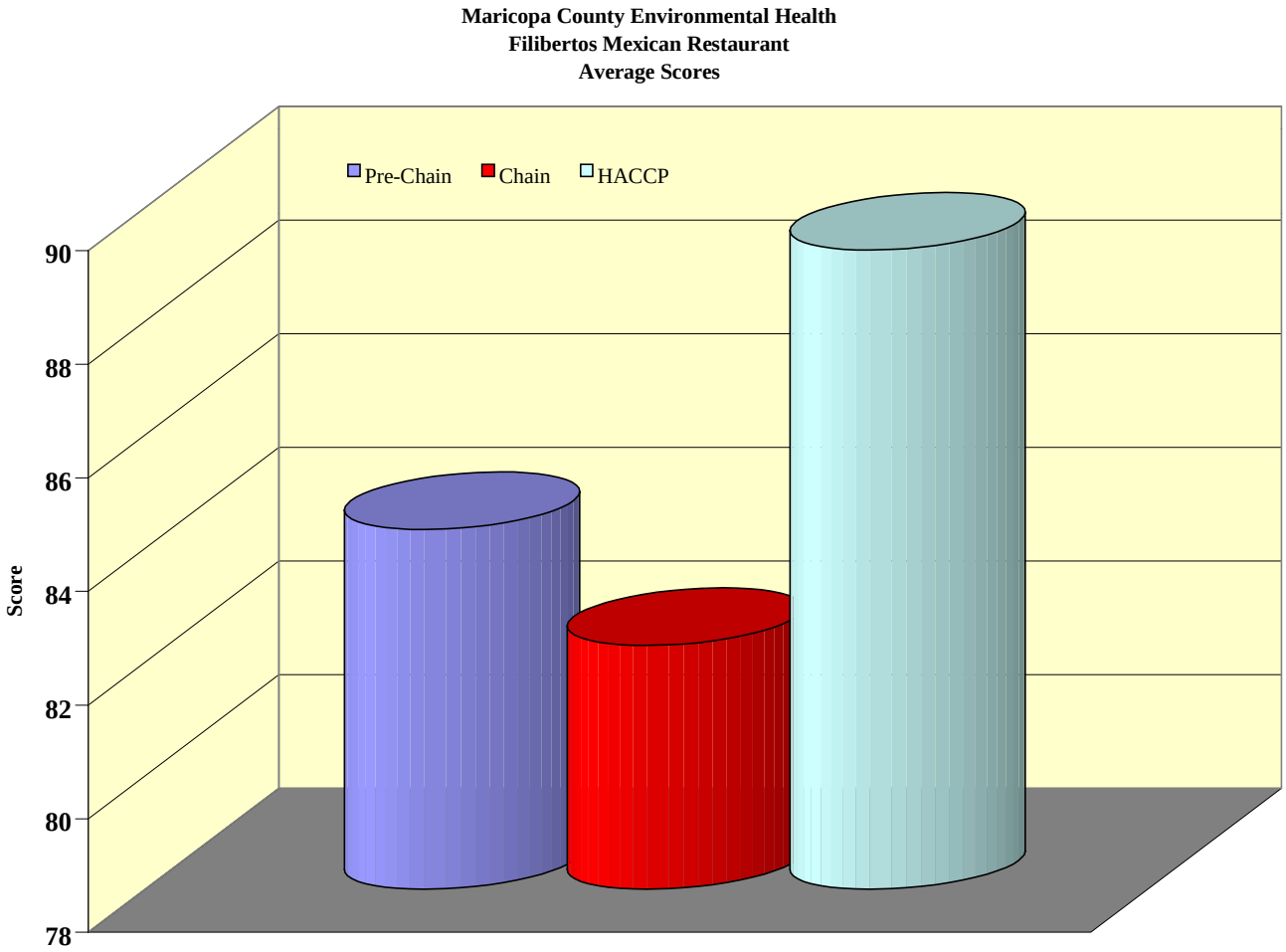


Figure 13: Filiberto's Scores Pre-Chain vs. Chain vs. HACCP **BACK TO PAGE 18**

Maricopa County Environmental Health
Filibertos Mexican Restaurants
Amount of Food Embargoed
1996-2000

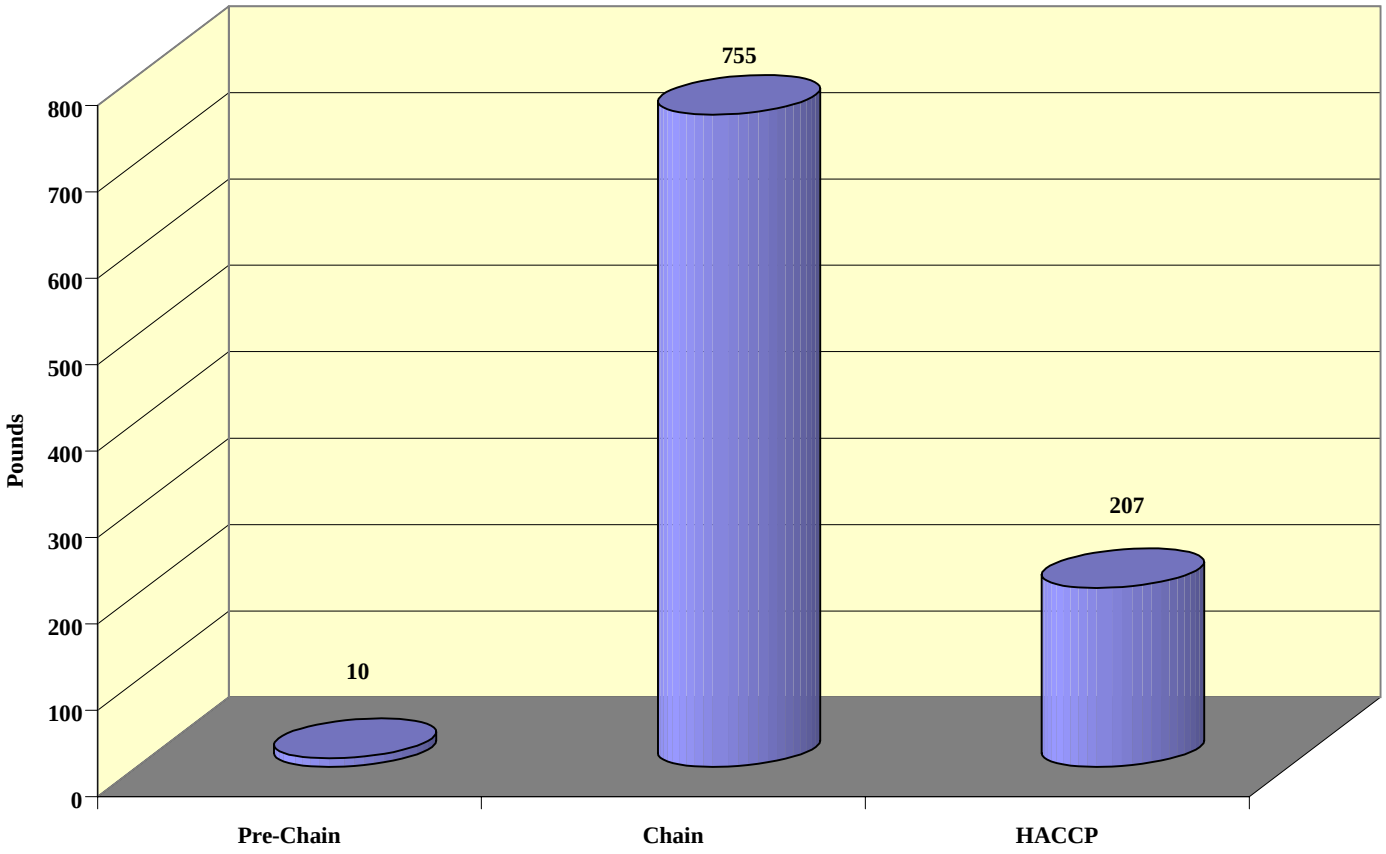


Figure 14: Food Embargoed at Filiberto's **BACK TO PAGE 18**

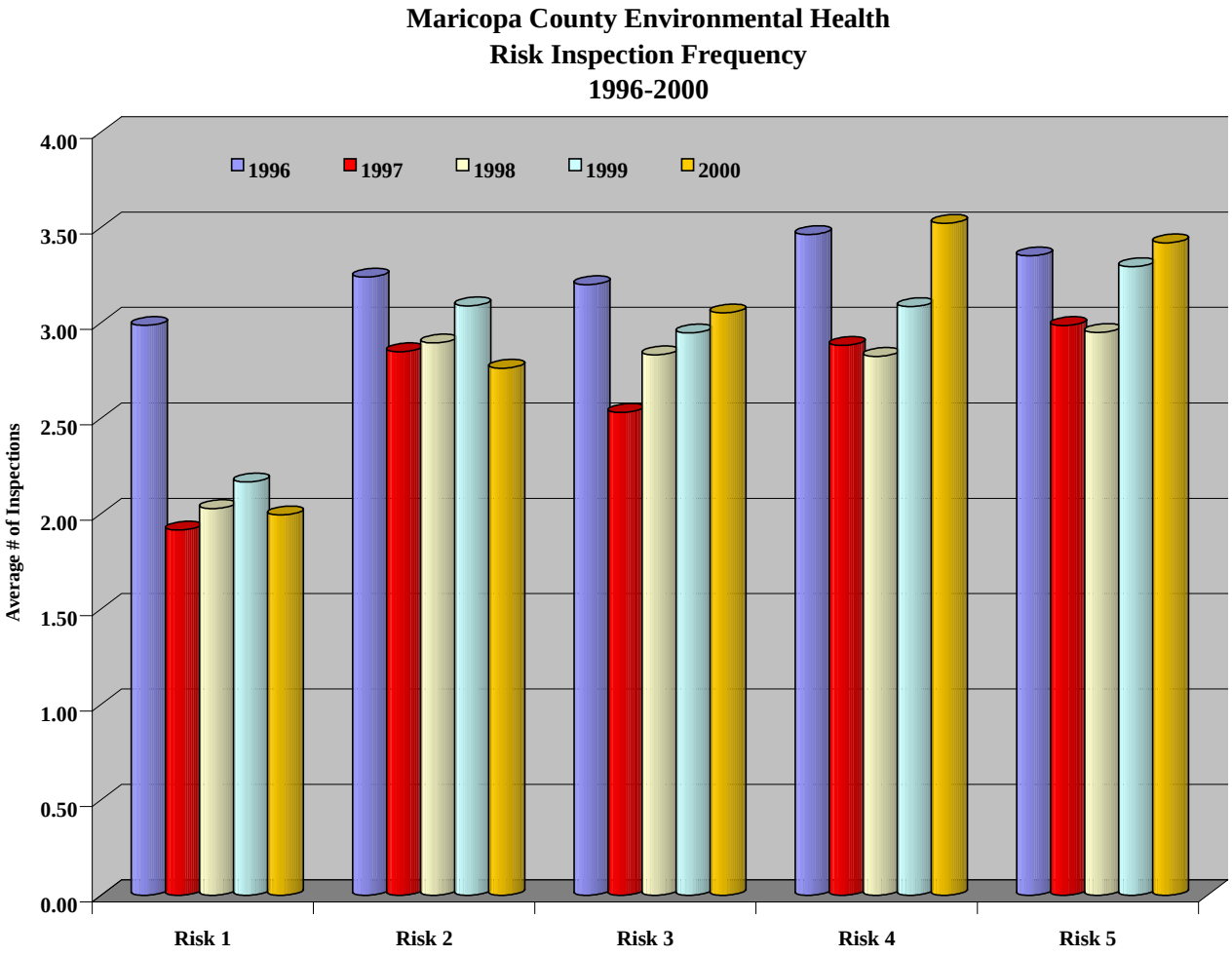


Figure 15: Inspection Frequencies by Risk 1996 – 2000 **BACK TO PAGE 18**

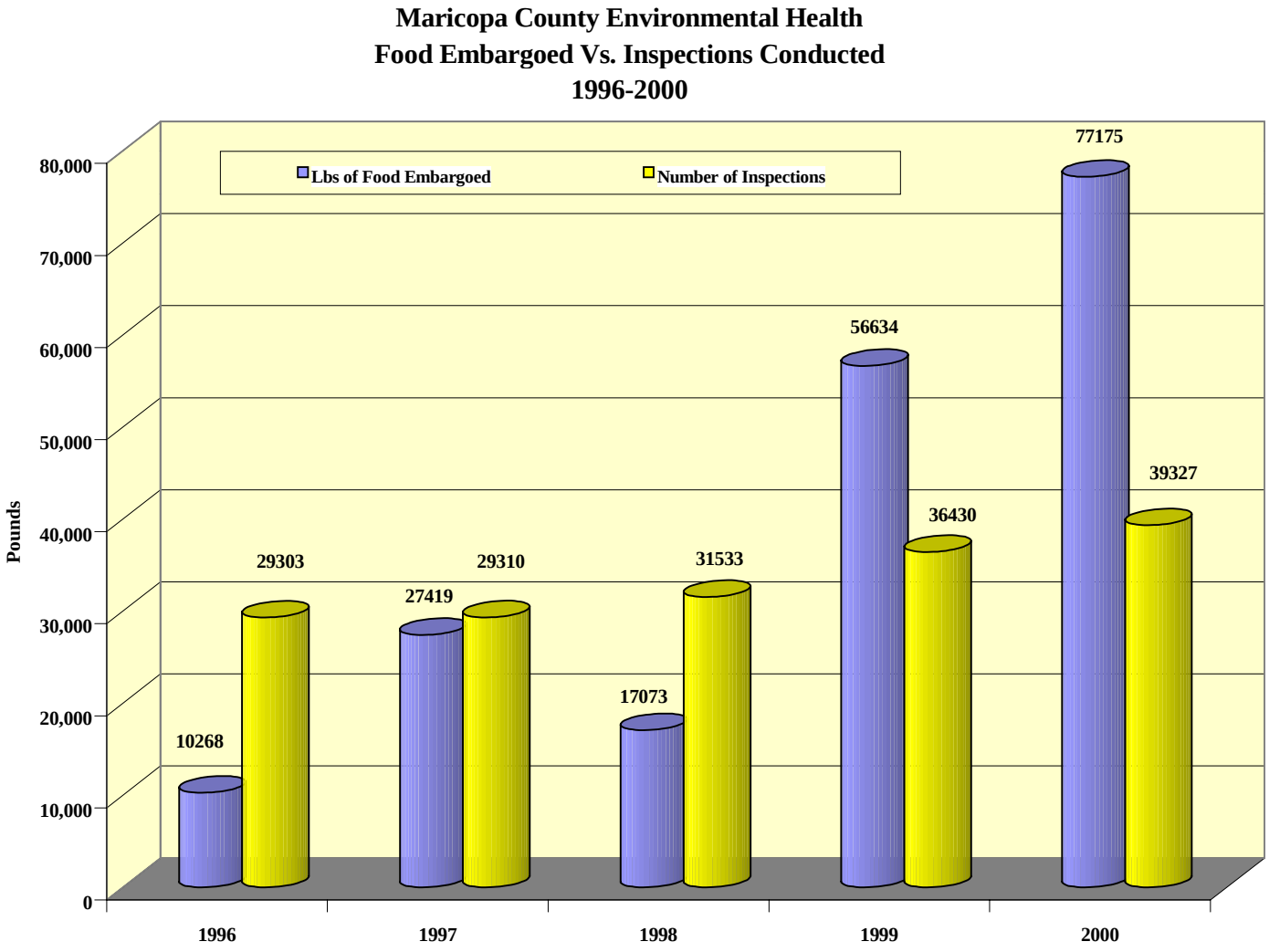


Figure 16: Food Embargoed 1996 – 2000 **BACK TO PAGE 18**

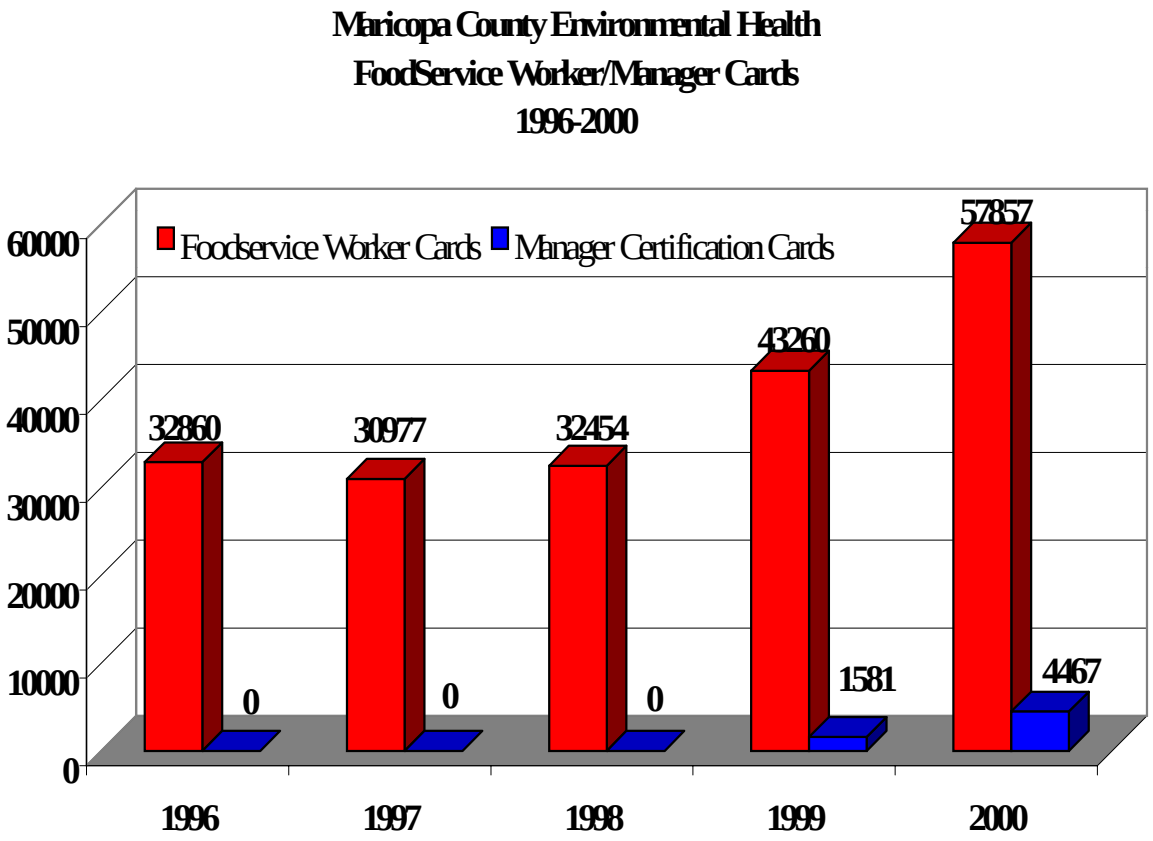


Figure 17: Food Service Worker Totals 1996 – 2000 **BACK TO PAGE 19**

Type of Service :	Excellent	Good	Satisfactory	Poor
1. Upon entry inspector properly introduced him/herself ††	188 (80%) †	41 (17%)	6 (2.5%)	1 (0.5%)
2. Professional in manner	189 (81%)	38 (16%)	7 (3%)	0 (0%)
3. Consistent and fair	163 (70%)	57 (24%)	9 (4%)	5 (2%)
4. Inspection technique	128 (55%)	92 (40%)	12 (5%)	0 (0%)
5. Helpful in solving problems and answering questions	178 (76%)	46 (19.5%)	9 (4%)	1 (0.5%)
6. Time taken to understand the establishment operations	170 (72%)	46 (20%)	16 (7%)	3 (1%)
7. Explanation of inspection report	176 (75%)	49 (21%)	10 (4%)	0 (0%)
8. Overall quality	139 (76%)	33 (18%)	9 (5%)	3 (1%)
9. Quality of computerized inspection report	167 (76%)	43 (19.5%)	9 (4%)	1 (0.5%)
10. Ease of locating inspection information on Maricopa County website (www.maricopa.gov)	115 (70%)	41 (25%)	7 (4%)	2 (1%)

† Percentage indicates portion of responses in each category for answers to the particular question.

†† Particular questions on some surveys were left blank by the respondent.

Table 7: Environmental Health Customer Survey Results **GO TO PAGE 26, 27, 28**

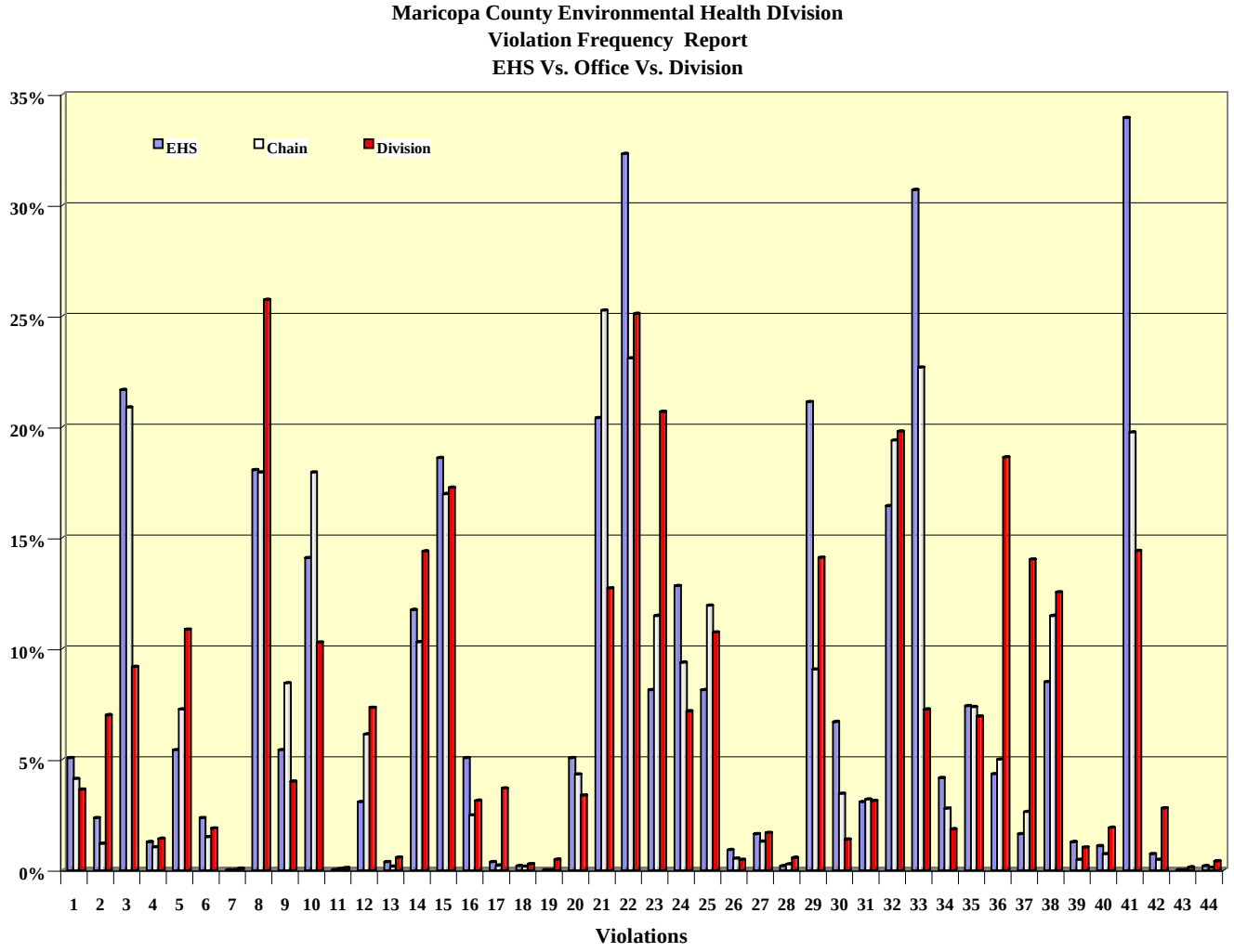


Figure 18: Example of a Violation Frequency Chart (EHS vs. Office vs. Division) PAGE 27

Maricopa County Environmental Health Division
Average Critical Violation Frequency Report
1996-2000

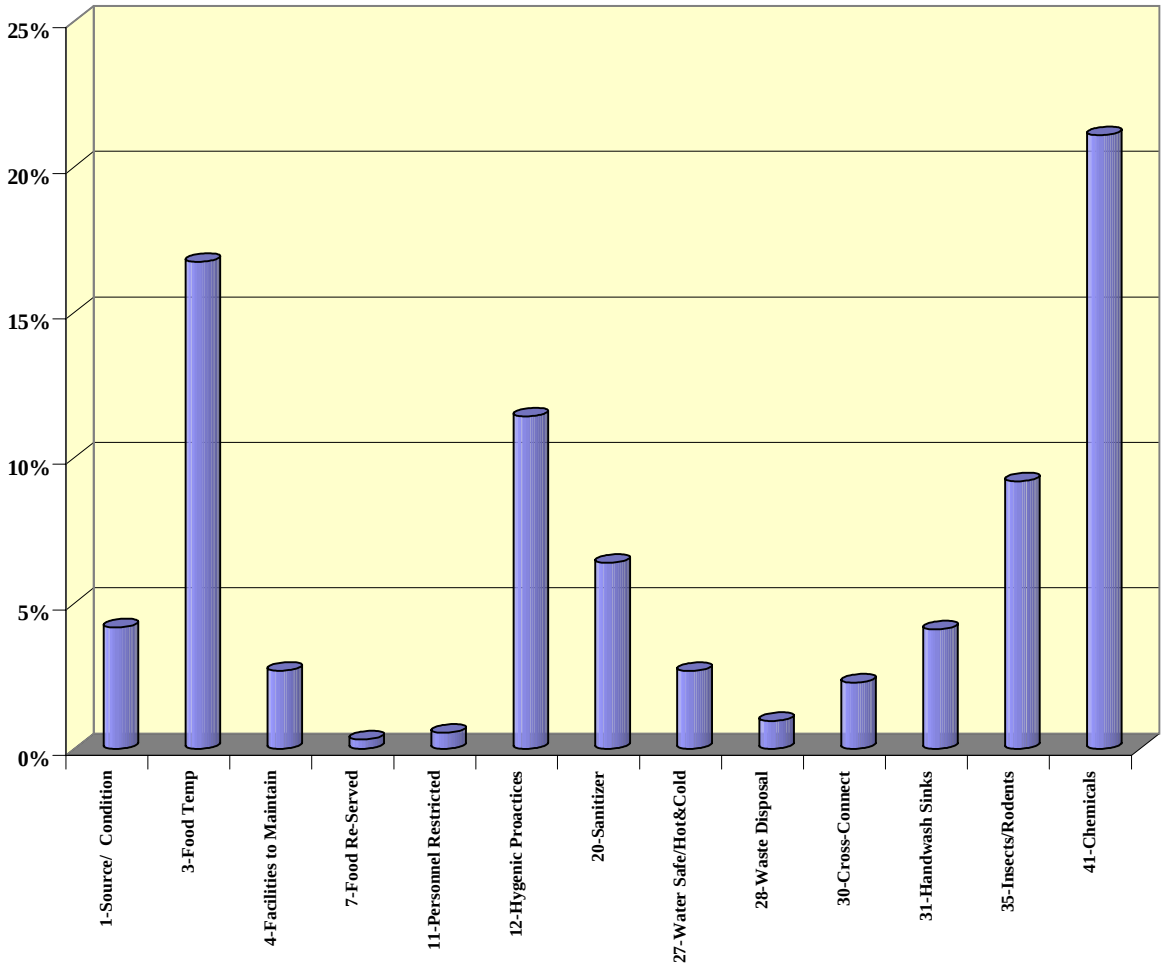


Figure 19: Average Critical Violation Frequencies 1996 - 2000 **BACK TO PAGE 27**

Figure 20: 1999 NACO Achievement Award for 'Full Restaurant Inspection Disclosure on the Internet VS Use of Grade Cards' BACK TO PAGE 28

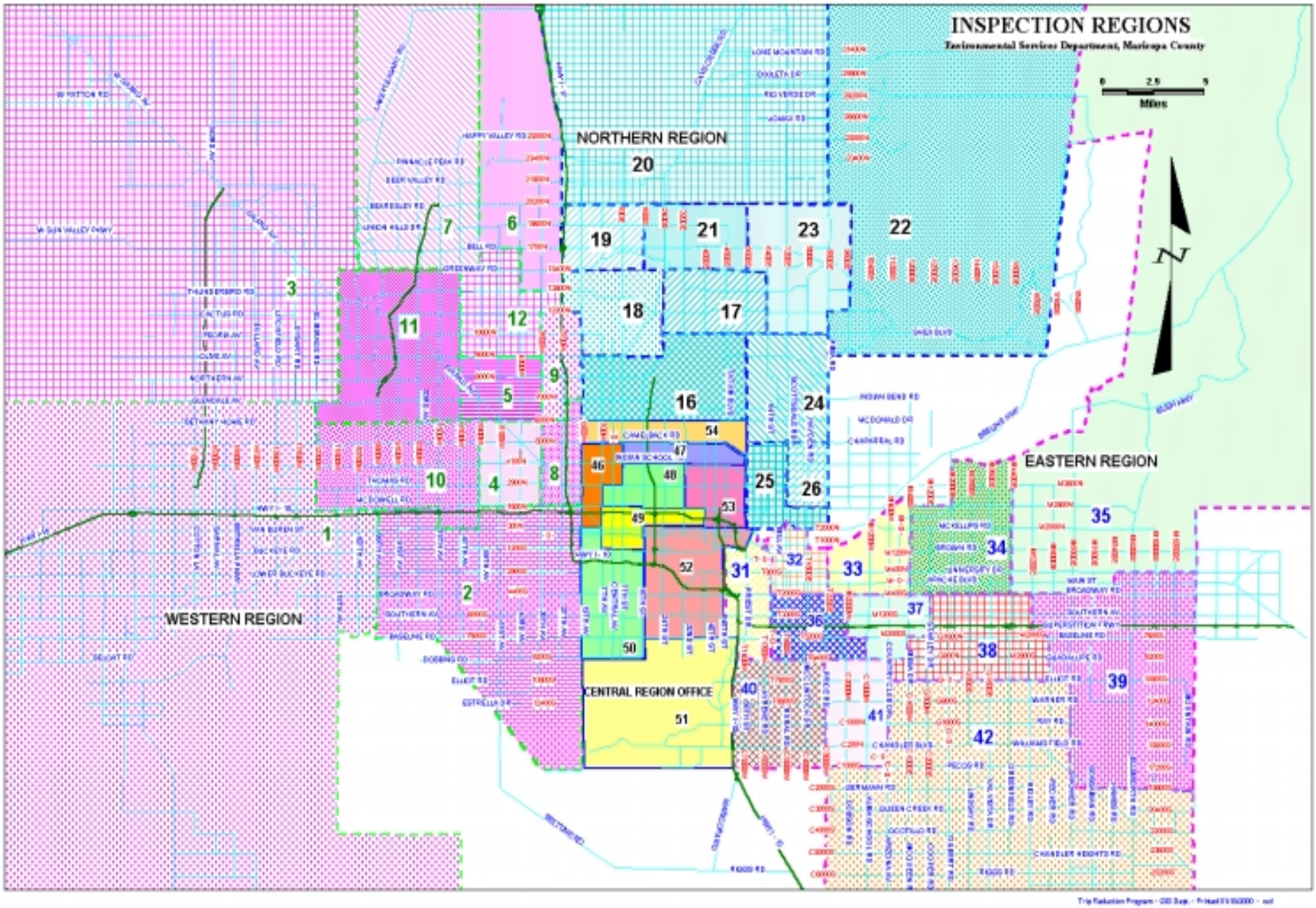


Figure 2: Regional Office Map **BACK TO PAGE 3**