AFFORDABILITY AND CHOICE TODAY (A•C•T) REGULATORY REFORM PROJECT

Bringing Computers into the Permitting Process
Strathcona County, Alberta

Prepared for:

Federation of Canadian Municipalities
Canadian Home Builders' Association
Canadian Housing and Renewal Association
Canada Mortgage and Housing Corporation

FOREWORD

The project documented in this case study received funding assistance under the Affordability and Choice Today (A•C•T) Program. A•C•T is a joint initiative, managed by the Federation of Canadian Municipalities, the Canadian Home Builders' Association, and the Canadian Housing and Renewal Association, together with the funding agency Canada Mortgage and Housing Corporation. The A•C•T Program is administered by the Federation of Canadian Municipalities.

A•C•T, which was launched in January, 1990, was designed to foster changes to planning and building regulations and residential development approval procedures in order to improve housing affordability, choice and quality.

In 1998, the A•C•T program was recognized by the United Nations Centre for Human Settlements as a global best practice in improving the living environment.

Through A•C•T, grants are awarded to municipalities, private and non-profit builders and developers, planners and architects to undertake innovative regulatory reform initiatives in municipalities across Canada. Three types of projects are awarded grants under the A•C•T Program: Demonstration Projects, Streamlined Approval Process Projects, and Case Studies (of existing initiatives).

- *Demonstration Projects* involve the construction of innovative housing that demonstrates how modifications to planning and construction regulations can improve affordability, choice and quality.

- *Streamlined Approval Process Projects* involve development of a method or approach that reduces the time and effort needed to obtain approvals for housing projects.
- *Case Study* grants are awarded for the documentation of existing regulatory reform initiatives.

Change and innovation require the participation of all the players in the housing sector. A•C•T provides a unique opportunity for groups at the local level to work together to identify housing concerns, reach consensus on potential solutions, and implement action.

Consequently, a key component of A•C•T-sponsored projects is the participation and cooperation of various players in the housing sector in all phases of each project, from development to realization.

All projects awarded a grant under the A•C•T Program are documented as case studies in order to share information on the initiatives and the benefits of regulatory reform with other Canadian communities.

Each case study discusses the regulatory reform initiative, its goals and the lessons learned. Where appropriate, the cost savings resulting from modifications in various planning, development, and construction regulations are calculated and reported.

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PROJECT OVERVIEW

Strathcona County, which lies just east of Edmonton, is Alberta's third largest municipality. Over the mid 1990s, development and building activities required processing of 6,000 permit approvals annually.

During the early 1990s, the County had three separate groups involved in permitting. Applicants had to go through three separate sets of forms and procedures, and processes used for logging and tracking each type of permit were manual and cumbersome. Both Strathcona and local industry wanted to reduce red tape and streamline the application and approval processes.

The County was awarded an A•C•T grant to help develop a computerized permit processing system and data base, integrated with the existing tax roll and assessment data base. (The County itself provided the majority of the funding.) Specific objectives to be achieved included:

- three-day turnaround for single-family residential permit applications;
- a streamlined computerized permit approval process;
- permit processes based on outputs, rather than functions; and
- effective utilization of existing human resources.

A project group was set up with representatives from the affected County departments, and with input from the Greater Edmonton Home Builders' Association and the Urban Development Institute, Edmonton Chapter. Most of the day-to-day work was done by County staff.

The representatives defined a new model permitting process. Meanwhile, a staff working group conducted a review of options for computerizing the permitting process: in-house programming; piggybacking on the City of Edmonton's custom programming; getting their own custom program, or using an existing software "package" solution.

The first two options were rejected as impractical. A custom program option was explored, but the County came to the conclusion that this would be impractical too.

One "package" was brought in for a 60-day trial at the end of 1995. However, it was found to be too limited for the County's long term needs. After more extensive investigations including site visits, Municipal Software Corporation was contracted to install and test its CityView software.

During 1997, forms were designed to capture all of the required information. Routing, flagging and tracking processes were customized for Strathcona's needs. Links were created with Strathcona's existing programs. Staff training was held.

The system came "on line" January 1, 1998. Since then, several modifications have been made. New departments and functions are being added. Some problems have taken longer than others to be resolved.

The computerized data base has eliminated much duplication of information and effort. It has also significantly improved logging and tracking of applications. By streamlining and integrating procedures, the County has reduced turnaround times for permit approvals and made the process more convenient for customers. This, in turn, has contributed directly to affordable housing by keeping administrative and development costs down.

Department staff offer four main lessons for other municipalities considering a similar initiative:

1) Departmental procedures should be as clear and simple as possible before you start computerization.
2) Your process needs must drive the software and not the other way around.
3) Both the software packages and the companies that offer them should be thoroughly researched.
4) Recognize the limits of a packaged approach as well as the advantages.

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1.0 PROJECT DESCRIPTION

1.1 Incentive for the Project

Strathcona County is the third largest municipal government in Alberta, with busy development control and building/inspections functions.

In 1992, outside management consultants reviewed the customer-related services of the departments responsible for those services. The County was also reviewing its organizational structure and efficiency.

At the time, all permit approvals were handled through paper files. Two separate departments were involved (development control and building inspections). Each had its own applications and permit procedures.

It was very difficult to keep track of exactly what permits had been issued for a specific piece of land at any one time. At times, it was a major task to find whose desk the files were on. In addition, the process of issuing even a simple permit was taking 10 to 14 days.

Land owners, builders, developers and trade contractors found the system complicated, inefficient and very slow.

The review process stimulated new discussions about procedures and organization, and made several suggestions for improvement.

As a result, the County decided to develop a computerized permit processing system and database, which would be integrated with the existing assessment and tax roll data base. This system would allow all information for a given piece of land to be available to all permit-related staff. Data would be instantly updated as the various applications were made and permits were issued.

1.2 Formulation of Project Objectives, Strategies and Mobilization of Resources

During 1993 and early 1994, the County held internal staff workshops and meetings with industry.

They discussed what was working, what could be streamlined and what new capabilities were needed.

Rohit Development Ltd's Foxhaven Lakes project   Photo courtesy Strathcona County This Week newspaper

The work program was overseen by a project team, work groups and resource groups. Representatives from the Greater Edmonton Home Builders' Association and the Urban Development Institute of Alberta, Greater Edmonton Chapter, were included on the project team. County staff from the departments responsible for permit review, inspections and information systems did most of the day-to-day work. Staff responsible for corporate planning, assessment and taxation, GIS, legal services and emergency services also had input.

Development, building, and inspection staff wanted a system where they could enter a legal land description and get all the up-to-date information on ownership and permits in one electronic format. They wanted easy-to-use forms for all application data, which would stay on file for the next information request. They also wanted a system that would incorporate notification processes, track aging permits and produce reports for management, businesses, County Councillors and other levels of government—and could eventually include information about planning, appeals, bylaw enforcement, emergency services, etc.

Industry wanted "one stop shopping"—a system where they would only have to give general information once, and only have to apply to one department for permits. They wanted to cut down on red tape, and to bring the time for issuing permits down to two or three days instead of two or three weeks.

Other County departments wanted to make sure the system was integrated with the existing data base for the tax roll and assessment—and would be available in the future to other interested departments, including economic development, corporate planning, and environmental operations.

During the goal-setting process, it became obvious that computerization would involve more than simply translating existing processes into an electronic format. Some major organizational changes and rethinking of existing procedures would be required to make the process work efficiently.

The team applied for an A•C•T grant of $10,000 towards developing the permit processing data base. This amount represented only a small part of the total project cost.

The County itself provided all of the additional funds to get the system up and running—now in the order of $300,000 to $400,000.

1.3   Project Methodology

Given the fast pace of change in computer technology and applications, and the fact that corporate reorganization was required, this project has involved exploration of several different solutions. Those which were considered and rejected helped to illuminate possible problems and to refine objectives.

Progress took place in four stages[1]:
- initial review and "custom" software proposal, and major departmental reorganization;
- first packaged software trial;
- second packaged software installation; and
- post-installation review and upgrading.

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[1]Progress on this project is described in "*Computerized Permitting Process and Data Base Project: Final Report*", Strathcona County, November 1998. This report is available from the Canadian Housing Information Centre at 700 Montreal Road, Ottawa, Ontario K1A 0P7. Tel: (613) 748-2367. Toll-free: 1-800-668-2642. Fax: (613) 748-4069. e-mail: chic@cmhc-schl.gc.ca

1.3.a Initial Review and Custom Software Proposal

In 1992 and 1993, staff from the Information Services Department investigated various software solutions for municipal permitting. The options considered included:
- in-house software development by the County's own Information Services Department;
- use of an outside software development company to produce a custom permit system;
- use of one of two existing commercial software "packages", one from an established U.S. company specializing in local government software, the other from a new Canadian company with few practical applications at the time; and
- tracking the City of Edmonton's experience with developing its own custom software.

County staff state that the City of Edmonton software was not a real option. It was still under development at the time, and the City was not in the business of marketing and supporting the software they developed. Even now, it would probably be too expensive for a municipality the size of Strathcona County. However, County staff kept in close contact with their counterparts in Edmonton, and were able to benefit from some of their experiences.

In-house software development was ruled out immediately as being too risky. There were concerns about both of the available package solutions, so the County's first response was to ask an outside software development company to submit a proposal.

In conjunction with that proposal, work plans were developed, and staff representatives drafted a new "model permit process". At the same time, major changes were made to the branch organization and procedures.

Once the model permitting process and database requirements were down on paper, the County concluded that the independent software company's proposal was not the best route to follow.

1.3.b Further Review and First Packaged Software Trial

During 1995, Information Services staff and the project team re-examined available "off the shelf" software packages.

Since two years had passed since the original review, it was anticipated that programs which had been explored previously would have been improved and expanded by the time of this review.

The County looked at the software companies' experience, growth and financial stability, their commitment to research and development, their market penetration and the technological direction of their future plans.

They looked at functionality, and some of the key potential applications for a computerized permitting system, e.g.:
- permit applications
- plan check tracking
- permit approval tracking
- routing
- scheduling (inspections, reports, public notices, etc.)
- noting conditions
- assessment information
- mapping interface
- geographic information

- detailed building project information
- fire protection information
- tracking hazardous materials
- database of contractor/architect/ engineer/developer information
- development standards
- licensing information
- project status
- public correspondence
- model plans
- hand held computer reporting
- inspection reports
- inspection/enforcement actions
- complaints tracking

One company seemed to have a more appropriate solution, so the County conducted telephone interviews with four municipalities which were using its software already. The four (one in Canada and three in the U.S.) were of a similar size to Strathcona.

Those reference interviews concentrated on determining how the software was used and how it performed, through questions like these:
- how long has the software been installed?
- what hardware is used?
- how many users are there?
- which of the functions Strathcona wants to use are included in this application?
- what functions are not included and why?
- what other programs are tied in and how well does that process function?
- how efficient is the software company's installation process?
- is training available/necessary/worthwhile?
- how easy did municipal staff find the programs?
- how responsive is the company's technical support?
- can the software be customized?
- can users get more significant changes?

- how often is the software updated?
- what problems have been experienced?
- what are the costs?
- what are the advantages, and can they be measured?
- what are the future plans?

The review brought back positive comments from the four municipalities. Although a few problems and shortcomings were mentioned, and the installations were somewhat different from Strathcona's anticipated long term plans, users were quite happy with the product and with the support.

Based on these reports, the company was contracted to provide its product for a 60-day trial. A select group of staff who might eventually use the system were trained for a week, then asked to "put the software through its paces". At the end of this period, the users decided the product did not allow the level of customization they wanted, or the proposed expansion to other non-permitting applications.

1.3.c Further Review and Installation of Second Packaged Software

During 1996, staff conducted another review of available off-the-shelf programs. Again, new versions and options were available. At the same time, the County was performing another process review of its planning, development, permitting and inspection functions. Alberta had made some major changes to its planning and safety codes legislation, including new responsibilities for municipalities, which had to be reflected in departmental functions.

After reviewing the software options, including functionality and hardware requirements, and conducting further phone references, staff zeroed in on one candidate package offered by

Municipal Software Corporation, Victoria, B.C. This package, called CityView, appeared to provide the flexibility, user friendliness, inherent mapping capabilities and Canadian presence that the County was seeking.

Photo courtesy Strathcona County

Before proceeding with another trial, however, a small group actually went to visit a number of municipalities in British Columbia which were using the product. This gave them the opportunity to see the program "in action" and talk to their counterparts about actual day-to-day operations. The group was impressed by the fact that CityView was being used for different purposes in each municipality. It was also impressed by the depth of the system and the extensive ability to customize.

The County signed a contract for the new system. Once the department's concurrent review of its own internal processes was finalized, and the departmental reorganization put into place, implementation of the new computerized permitting system began in January 1997.

During the spring, the County team worked with the software company to customize the existing package.

Information needs were evaluated:
- what types of information were required, and
- what questions should be included on forms to make sure all that information is collected for the computer system. Process and routing procedures were set out.

Interfaces allowing CityView to communicate with the County's existing programs were designed and tested. As part of this process, map and source data were assembled, and the software company developed the necessary links between the new and the existing software.

Training manuals were prepared and training was conducted—first for information systems and administration personnel, and subsequently for those who would become trainers for other staff ("train the trainer" sessions). Staff training took place in the final month before the system went "live" in January of 1998.

1.3.d Post-Installation Review and Upgrading

After the system was installed, the County entered a new phase of monitoring. This included setting up and evaluating the following:
- procedures for updating all programs when changes are made to one;
- backup schedules;
- report printing procedures; and
- daily, weekly and monthly updates and reports.

A number of problems were found and corrected. Some of the problems took longer than others to resolve. As of mid 1999, the project team had begun work on expanding to other departments—again building the new forms and processes which would integrate

properly with the existing database and software. The next addition was expected to be the Corporate Secretary's office—which deals with appeals from the Planning and Development Review Services Department's decisions.

By the beginning of 2000, new forms, procedures and database expansions are expected to be added, which would include planning, rezoning and subdivision approval processes in Strathcona's customized CityView system.

2.0 PROJECT RESULTS

Strathcona County's Mayor, Vern Hartwell, says the project has created a "huge improvement" in permitting efficiency. "It has allowed our planning and development review services department to analyse and expedite a number of measures. We will continue to work with builders and developers and progress towards our goals in the future."
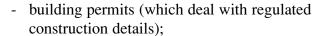
The main results to date include the following:

2.1   Model Permitting Processes

One of the first outcomes of this project was a set of four flow charts, showing the process followed by an applicant and his/her file for:

- development permits (which allow initial excavation and construction of foundations);

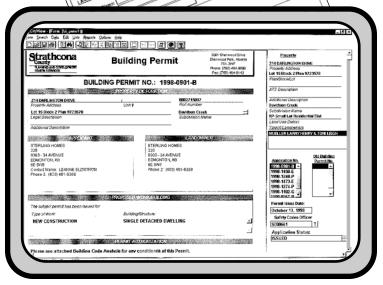- building permits (which deal with regulated construction details);
- bylaw enforcement (which deals with infractions of land use regulations); and
- code compliance (which deals with infractions of building code requirements)

These flow charts reflect industry and staff input. They break down the permitting, enforcement and compliance procedures into a model with easy-to-follow steps, identifying who should do what, where, and how the pieces fit together. They formed the basis for the County's discussions about the database and software requirements.

In addition, less detailed flow charts were prepared, showing procedures for:
- land use bylaw/municipal plan amendments;
- amendments to existing or approval of new area plans (e.g. neighbourhood plans, area structure plans); and
- subdivision approvals.

The flow charts can be found in Attachment 1 of Strathcona County's Final Report on the A•C•T project, November 1998.

2.2 Customized Software and Database

With the CityView computer system, staff can maintain the development, sign, building, plumbing, gas and electrical permit data.

Once the data is entered, the program tracks applications, issues permits, schedules inspections, and produces reports for the department.

The system has been successfully linked to the property information database maintained by the assessment and taxation department. Just before implementation, that information was copied into CityView (roll number, municipal address and legal description of each property, plus owners' names, addresses, phone numbers, etc.) Now, changes made to the property database are automatically copied to CityView each evening.

When a permit application is received, data entry clerks attach information about the new development and construction to the property information in CityView. When new permit forms, inspection reports etc. are required, the information on the database is automatically reproduced for them. Whenever new information is input (permits granted, conditions, inspections reports, etc.), it becomes available to anyone logging on to the system.

Once the reviews are completed, the program issues a permit. If the permit is temporary or will require renewal, it will appear on a report, reminding a development officer to review the situation prior to the expiry date. When notification is required to adjacent properties, the clerk selects the required properties on a map. Then, the system produces a list of names and addresses which can be used with a word processing program to create the required letters and envelopes.

During construction, the project's inspection requests and inspection results are logged. Lists of all inspectors' activities are produced on a daily basis.

At the end of the month, standard reports on permit status, permit renewals and temporary permits are produced for the County. Reports for Statistics Canada and Canada Mortgage and Housing Corporation can be prepared and submitted electronically. Instead of multiple tracking logs, there is now a single database. Paper costs have been reduced as well. All permit information for a specific property can be searched and viewed.

Expansion to other functions has taken longer than expected. The County expects to add the Corporate Secretary's office to the system next (this office deals with appeals from Planning and Development Review Services Department decisions).

By the beginning of 2000, the planning, rezoning and subdivision approval processes should be added to the database as well. That means information on applicants, plans, decisions, etc. will also be available to anyone who logs on to the system. It is expected to speed up processing and approvals.

Ron Copithorne is Construction Manager for Greenboro Homes and Chair of the Greater Edmonton Home Builders' Association Builder Committee which meets regularly with Strathcona County.

He says there has been a major change in permit issuance since the new system was brought in. "It used to take two to three weeks to get a building permit. Now it's consistently less than one week."

Bruno Salvalaggio, President of local builder Salvi Homes, is a past Chair of the GEHBA Strathcona Liaison Committee. He agrees the system has helped speed up permitting—which is a big help. "But I'd like to see the system taken much further," he says. "I think we should be able to apply by e-mail from our office with all the plans. The communications could all be done by e-mail as well, and we could set up a credit account with the City, which could be drawn down to pay for fees."

Joyce Perkins is Coordinator of the County's Development Control and Permitting Branch, and Coordinator of this project. She says simple permit applications are often processed in about

three days now. "If they take more than a week, that gets flagged."

The County will accept plans on diskette, but e-mailing them would be problematic, Perkins adds. "They're too big. I don't know of a municipality that has found a way to e-mail construction plans at this time."

2.3 Corporate Reorganization and Streamlining

When the County started looking at the possibility of computerization, the first thing it did was to examine users' needs and existing processes. It became obvious that users' needs could only be met effectively if the departments were reorganized and their procedures were combined. Although it was not strictly speaking part of the computerization project, this reorganization was vital to its success.

Prior to 1993, there were separate departments responsible for permits under the Land Use Bylaw (Planning and Development department), and the Provincial Plumbing and Building Codes (Building Inspections and Bylaw Services department).

Each permit area had its own independent process and file maintenance, with no common database. Permit application information, filing, logging and tracking systems were established and maintained by all three areas.

In 1993, the two departments were combined, bringing all three permit-related branches under the new and expanded Development Review and Inspection Services department.

Then, in 1994, discussions arising from this project caused a fundamental rethinking of the various review and approval processes within the Department.

Branch hierarchies based on traditional functions were re-evaluated. Comments from industry and County representatives helped to identify the common requirements for processes and outputs. As a result, the permitting functions related to development control, building and plumbing were combined and grouped into one branch. The reorganization continued, particularly in the aftermath of Alberta's major changes to planning and safety codes legislation.

In 1996, the long range planning function (which had been in the Planning and Engineering Services Department), was brought into the department, which was then renamed Planning and Development Review Services.

2.4   Lessons Learned

Strathcona's Perkins identifies four main lessons from the computerized permitting project.

1) Departmental procedures should be as clear and simple as possible before you start computerization.

In Strathcona's case, the process review and corporate reorganizations delayed progress on the project, but the "one-stop shopping" approach and reduction of red tape made a big contribution to its success.

2) Your process needs must drive the software and not the other way around.

Too often, people try to fit their operations into software which is foreign to their procedures. Even though Strathcona could not afford its own custom-built software program, it looked for a package which matched its basic approach and allowed a lot of customization. On the other hand, while looking at different software installations, you may find some new ways to simplify your current procedures.

3) Both software packages and the companies that offer them should be thoroughly researched.

It is important to see programs in action—preferably in similar sized municipalities which are using the same features in the same (or very similar) way as you plan to do. In addition, you need to ask about the company and its customer support.

If you get a glitch that freezes the entire database, you can't afford to spend days waiting for a company representative to respond.

4) Recognize the limits of a packaged approach.

While a package program may be customized to fit your needs today, it won't necessarily keep pace with them tomorrow. Many companies offering packages hold regular users' forums to discuss problems, opportunities and what features should be added in the next upgrade. If your municipality is growing faster than the group, you may end up needing a lot of relatively expensive customization—or be unable to accomplish what you want. That has to be balanced against the undeniable cost advantages of a good package program.

Mayor Hartwell emphasizes that computerization will not be a panacea. "People should proceed with some caution and logical degree of expectation," he says. "If your expectations are too high, you won't find complete success at your fingertips. But with realistic expectations, you will be able to achieve your goals."

3.0 DESCRIPTION OF COMMUNITY AND KEY PLAYERS

3.1 Strathcona County

Strathcona County is the third largest municipality in Alberta, after Edmonton and Calgary. It covers 500 square miles and has a population of approximately 65,000 people, about two thirds of whom live in its main urban area, Sherwood Park. There are approximately 500 full time staff.

The County is located just outside Edmonton, and is subject to very similar demand cycles in its housing and development markets.

The County initiated the development of the A•C•T project proposal. County staff, particularly in the information services, buildings and planning functions, devoted a significant amount of time to the project.

3.2 Industry

The Greater Edmonton Home Builders' Association (GEHBA) represents 300 member companies, including builders, developers, manufacturers, trade contractors, professional services, etc. Many of its members are active in Strathcona County, particularly in Sherwood Park, which is just east of Edmonton.

The Urban Development Institute (UDI), Edmonton Chapter, represents developers, construction companies and consultants involved in land development.

Both organizations supported the computerized permitting proposal as a way of reducing red tape and speeding up the development process.

After the initial consultations on goals and needs, the associations were only involved in a monitoring function. Day-to-day decisions about processes and technical details were seen as internal matters for the municipality.

In addition, comments and suggestions from the regular monthly meetings between GEHBA and Strathcona County have also influenced the progress of this project.

3.3 Consultants

Municipal Software Corporation, was originally founded in 1982 (as New Era Software Products Inc.) by former two local government employees. Headquartered in Victoria, B.C., it produces CityView, an integrated geographic information system (GIS) based software which can be used by different departments within local governments.

4.0 IMPACT ON AFFORDABILITY, CHOICE AND QUALITY

4.1 Faster permit approval reduces delay costs

Both municipal representatives and builders agree that the time taken to issue permits has dropped significantly since the new system went into place. Before the computerized s y s t e m was installed, issuing a simple permit often took two weeks or longer. Now, it usually takes about three days, despite the higher volumes of applications in 1999.

The project team's goal is to reduce approval time even further. In addition, notification time for public comment has been reduced measurably.

By the beginning of 2000, the County expects the system to be expanded to its planning functions, including rezoning and subdivision.

4.2 Computerization and one-stop shopping reduce red tape costs

One branch now deals with all permitting, so applicants no longer have to go to different offices to fill out different information and applications. Information is updated as it is entered, and is available immediately to all permitting staff.

Other departments can also get information quickly to speed up other functions, such as development appeals. The database includes geographic, property and owner information for each lot, so that doesn't have to be re-entered for every permit. During the next system upgrade, the County plans to add applicants' information to the database as well. A number of multiple processes, logs and tracking have been eliminated.

4.3 Staff can help deal with more complex applications

Since less time is spent on paperwork and tracking, human resources are used more efficiently. Development officers and building inspectors have more time to review complex applications and those involving innovative technologies.

This makes better use of their knowledge and helps improve quality. Unfortunately, some of the potential benefit has been eroded because the volume of applications has gone up dramatically.

4.4 Tracking identifies problems and opportunities quickly

The ability to track progress on applications, and red flag those which are delayed helps the County, builders, and developers to identify and resolve problems early. The ability to produce reports for local and other government levels helps monitor market trends and opportunities.