# Canadian Experience with Transfer of Development Credits

## and their Potential Application to Agri-Environmental Policy

March 2008

Prepared by Guy Greenaway and Kimberly Good

MIISTAKIS INSTITUTE



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# EXECUTIVE SUMMARY


The dialogue in Canada around sustainable land use is beginning to recognize there are land uses that we want to insulate from dramatic change, and trade-offs that need to be made, yet it loses momentum when considering how to do so practically. At the same time there has been increased discussion around market-based incentives (MBI) for land conservation. Many communities in the United States have turned to Transfer of Development Credits (TDC) programs as a way to protect the agricultural land base, while promoting economic development opportunities in their area. A TDC program seeks to move intensive development from landscapes at risk to landscapes better suited to those uses, facilitating a market-based transfer of that development potential, and associated perpetual conservation of the at-risk landscape.

This report summarizes the history and motivations regarding the tool, the fundamentals and basic components, four successful programs in the United States, the state of TDCs across Canada, and finishes with potential application to agri-environmental policy and insights into challenges and factors of success.

Transfer of Development Rights programs were first established in the United States in the mid- to late-1960's to preserve historical resources. By the 1970's, programs had been established to protect other land use values as well, such as environmentally significant areas and agricultural lands. As of 2007, there were at least 181 programs operating in the United States. Canada has been slow to adopt the tool.

Communities that have used the tool did so because of its ability to coordinate multiple conservation goals, work in areas under pressure for land conversion, provide enduring solutions, push past zoning, operate equitably and cost-effectively, and provide local, tailored solutions.

Fundamentally speaking, a Transfer of Development Credits (TDC) program has four basic components:

- *Sending area* - designation of the area which is targeted for increased conservation
- *Receiving area* - designation of the area which targeted for increased development
- *Transfer system* - development of a system which facilitates the valuation and transfer of development potential from one parcel to another
- *Program administrator* – an oversight body that develops and maintains the principles of the program and use of the tool

In an operational sense, the development of a TDC program has five primary steps: determine the need / desirability for a TDC program; initiate pubic consultation, identify TDC 'sending' and 'receiving' areas, create a development 'credit' system, and identify a mechanism(s) for extinguishing development potential on conservation parcels.

When considering the use of Transferable Development Credit (TDC) programs in Canada, the legality of their creation and implementation is of considerable interest. Although there is currently no overriding legislation in any province that expressly authorizes TDC programs, an Alberta-based review of jurisdiction and several program components from a legal perspective determined it is highly likely that municipalities can create and implement TDC programs.

Financial costs are difficult to determine due to the very specific economic and financial circumstances in each program. However, the key cost considerations are those related to administration and planning, background studies, public consultation and awareness, transaction costs, management of conservation lands, and potential TDC banks.

Transfer of Development Rights (TDR) programs have become a significant tool for the conservation of agricultural land in the United States, with ‘agricultural land preservation’ cited as a goal in 63.5% of programs. With a goal of better understanding the details of various programs the authors visited four American programs, meeting staff, developers, real estate agents, development rights brokers and independent planners. Programs visited and reviewed were in Larimer County and Boulder County Colorado, and Montgomery County and Calvert County, Maryland, in each case examining program goals, sending area designation, receiving area designation, credit transfer system and program administration.

While many jurisdictions in the United States have been using Transfer of Development Rights (TDR) programs for many decades, such programs have been applied in a very limited manner in Canada and typically in urban settings. Interest in TDCs in Canada began in the late 1970’s, and more recently has seen a resurgence of the conversation. The report reviews six examples of TDC-type programs in Canada, illustrating the respective program components; three urban examples (Vancouver, Toronto and Calgary) and three rural programs (L. M. Montgomery Land Trust in Prince Edward Island, Wheatland County in Alberta, and the Municipal District of Bighorn in Alberta). There are no comprehensive TDC programs in Canada designed to conserve rural, agricultural or environmentally significant landscapes, and only one urban example (Vancouver).

The Transfer of Development Credits (TDC) tool lends itself well to supporting agri-environmental policy in the Canadian context because in the presence of development pressure it has the ability to explicitly recognize, value and compensate agricultural and environmental values simultaneously. However, when looking specifically at the potential policy facets of catalyzing or supporting TDC applications, there are a number of strategic policy considerations, including the pressure for agricultural land conversion in Canada due to urbanization, the limits of addressing non-urbanization threats using TDCs, sensitivity to variations in national geography and culture, and the distinction between conserving land and prescribing management practices.

The impact a TDC program has in conserving land is entirely dependent on the program goals, specifically how they are articulated and operationalized, and whether multiple goals are vetted for incompatibilities. TDC programs can be set up with goals in support of ecological goods and services (EG&S) objectives, however, care must be taken to address incompatibilities that may arise between agricultural and ecological goals sets.

Conservation goals are articulated overall for the program, but effected on the ground largely through determining the sending areas, credit transfer system, and level of restriction contained in the deed-restricting device (e.g., conservation easement). As well, there are opportunities to use controls on the receiving area approval criteria.

Most important when considering the application of the TDC tool, is to remember that it is implemented for the most part by local government authorities. Provincial governments, from whom municipalities derive their power, have perhaps the greatest direct policy impact. However, while the federal government agencies may have less direct impact, they can play a critical role in catalyzing, promoting, and supporting TDC programs. To be most effective in that role, it is important to understand the role and potential activities of other levels of government, municipal and provincial.

As the level of government from which municipalities derive their power, provincial governments can play an important role in terms of providing legislative direction, program support, and technical and financial support

In considering the use of the TDC tool to support agri-environmental policy in Canada, there is a significant role for Agriculture and Agri-Food Canada to play in promoting and supporting this tool, especially when approached collaboratively with their provincial partners and sister agencies.

Similar to the provincial governments' considerations, federal agencies seeking to play a role in promoting TDC program establishment must have clarity first around their own goals, then how they might align with those of local community programs. The involvement of the federal government in the increased application of TDCs in Canada for the protection of agri-environmentally valued landscapes or landscape features could happen through education/promotion, promoting national collaboration, and/or providing program and financial support.

A key role for Agriculture and Agri-Food Canada would be to raise awareness of the TDC tool in support of the agri-environmental / EG&S goals in the Agricultural Policy Framework and Growing Forward. In conjunction with provincial and other partners, could develop internal or external expertise to provide information tools around common incentive approaches, development of stakeholder advisory groups, measuring 'value' in landscapes, methods for determining sending/receiving areas, and how to establish a TDC bank. These information pieces could be combined in an "Agri-Environmental Conservation Toolkit for Canadian Municipalities" with such tools as tradable development permits, conservation offsets, purchase of development rights, wetland mitigation banks, land trusts, and others.

As an agency with a national perspective, Agriculture and Agri-Food Canada is in a position to promote collaboration between different TDC interests nationally, potentially through discussion forums and information sharing, undertaking a national legal review of TDCs, developing land trust capacity, and championing the development of agricultural conservation easements.

Federal agencies can look to support TDC programs through development of critical tools such as methodologies for real estate market assessment and TDC credit valuation, or direct funding of ‘areas of importance’ planning, start-up costs, on-going planning development, and education and awareness activities.

Regardless of the players involved in establishing, operating and/or promoting the Transfer of Development Credits tool, there are a number of challenges facing both program establishers and managers, including getting community buy-in, determining program scope, identifying appropriate tools and capacity for protection, getting legal clarity, working with adjacent communities, intergovernmental relationships, and the lack of resources on the part of rural municipalities.

While determining which factors account for the success of any program is difficult, there are emergent factors that appear to be related to success. These include properly defining success, connecting the program to the community’s vision, on-going engagement of key stakeholders, a well-conceived credit system, making the program attractive to developers as well as conservationists, supporting/coordinating with complementary programs, getting support from other levels of government, maintaining program flexibility and stability, and providing equity and fairness.

TDC programs show great potential for supporting agri-environmental policy in Canada, but they must applied carefully. The ability to address agricultural and ecological conservation, while simultaneously supporting appropriate development makes it a potentially strong tool. As well, its extensive ability to adapt to local circumstances makes it a powerful tool which can have application all across Canada.

In seeking out the policy applications it is important to remember that it must support, and clearly so, existing agri-environmental conservation goals. Those goals must be aligned across jurisdictions. Properly conceived and catalyzed, Transfer of Development Credits (TDC) programs have the potential to strongly support the agri-environmental goals under the Growing Forward policy framework.

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# INTRODUCTION

The dialogue in Canada around land use – and more specifically around promoting land use that is environmentally sustainable – is beginning to encompass the idea that there are limits, land uses that we want to insulate from dramatic change. That dialogue is also starting to recognize that if we want to see certain land use types persist, while at the same time maintaining other valuable but more aggressive land use types, then hard choices need to be made around trade-offs. Where this dialogue does exist, the discussions are generally conceptual, and lose momentum when considering how one practically accomplishes the task of reconciling landscape conservation and development.

At the same time, and not coincidentally, there has been increased discussion around market-based incentives (MBI) for land conservation. These are mechanisms that combine the voluntary nature of the open market, the incenting power of financial gain, and the societal imperative of conservation. The goal is to bring about a desired societal change through individual financial compensation that is not derived from the public purse.

Many communities in the United States, and in particular agricultural communities, have turned to Transfer of Development Credits (TDC) programs as a way to protect the agricultural land base, while at the same time promoting a healthy matrix of economic development opportunities in their area (Pruetz, 2003). A TDC program seeks to move intensive development from landscapes at risk from such activities to landscapes better suited to those land uses. It does so by facilitating a market-based transfer of that development potential and associated perpetual conservation of the at-risk landscape.

Transfer of Development Credits (TDC) programs are as varied as the places in which they occur, which is a significant part of their success, and a huge challenge in reviewing their applicability from one jurisdiction to the next. However, there are circumstances that better support program establishment than others, and commonalities that appear in their factors of success. One thing is abundantly clear even in the places TDC programs have been very successful: they are not a "silver bullet" – that is, they do not work in all circumstances, and are only ONE tool in what must be a diverse toolbox.

## Report Purpose and Structure

The intent of this report is to summarize the gathered research in the context of understanding the state of the application of – or conversation surrounding – the tool in Canada, and to bring that information to bear on assessing the utility of the tool in supporting Canada's evolving agri-environmental policy work.

This report first summarizes the history and motivations regarding communities' use of the tool, then describes the fundamentals of the tool and its basic components. The substantive background information collected for this report is split into two pieces: a review of the state of Transfer of Development Credits program evolution across Canada, and a detailed review of four successful programs in the United States (Larimer County, CO; Boulder County, CO; Montgomery County, MD; and Calvert County, MD). The report finishes with the authors' initial conclusions regarding to the potential application of Transferable Development Credits to agri-environmental policy in Canada, and insights from the perspective of its outstanding challenges and the apparent factors contributing to success and failure.

## Methodology

There is a large body of literature emanating from the United States regarding the nature and application of the Transfer of Development Rights[1] tool (American Farmland Trust 2001, Kaplowitz et al 2006, Pruetz and Pruetz 2007, Pruetz 2003). However, as the tool has rarely been applied in Canada (and never fully in the context of agriculture), it is only generically applicable in the context of assessing the potential of the Transfer of Development Credits tool in Canada. This report, therefore, is based largely on primary research, supported by some literature review. The sources of information are as follows:

Prior to the initiation of this cross-Canada research, the authors had been conducting research on the applicability of the Transfer of Development Credits tool in Alberta, specifically Red Deer County. As part of – and as a result of – that research, the authors were able to speak with several municipal Councillors, municipal planners, academics, landowners, agriculture groups, developers, provincial government agencies and others in Alberta to discuss the feasibility of the tool.

In February of 2007, the authors visited four active and successful programs in the United States to review their operations and approaches, and had the opportunity to visit with planners, landowners, developers, real estate agents, brokers, and others.

During March of 2008, the authors conducted a key informant survey across Canada, identifying individuals and agencies in each province who might be able to provide insights on the use of the Transfer of Development Credits tool across Canada.

A limited literature review was conducted, with specific emphasis on studies and publications which highlighted trends and learnings from American programs.

[1] In the United States, Transfer of Development Credits programs carry many different names, but are referred to generically as Transfer of Development Rights (TDR) programs. Because property rights are not constitutionally enshrined in Canada as they are in the United States, Transfer of Development Credits has become the commonly accepted generic term.

# TRANSFER OF DEVELOPMENT CREDITS (TDCs)

## Understanding Transfer of Development Credits Programs

### *What is a Transfer of Development Credits program?*

Transfer of Development Credits (TDC) programs are a tool designed to help communities deal with the rapid conversion of their valued landscapes, while simultaneously promoting appropriate land development. The tool allows for the transfer of development potential from areas less suited to development (based on a community desire to see its character and function maintained), to areas more suited to increased development (based on their capacity to accept greater development activity).

A market-based structure facilitates the transfer of the development potential through private or brokered transactions. Parcels in areas designated both for increased development and for valued landscape conservation are assigned some base level of development potential, often in the form of literal credits. Those landowners / developers in the 'development' area can buy development potential (or credits) from those in the 'conservation' area, and increase their development density potential accordingly. The increased density provides a financial incentive to developers involved in the program, while the payment for credits provides a financial incentive to the program's 'conservation' landowners.

A long-term conservation mechanism protects the essential nature of the valued landscapes. A restriction is registered on title once development credits are transferred from conservation land parcels, providing protection that endures beyond zoning and local Council changes.

Ultimately, planners and decision makers are able to both plan for *and* catalyze (though incentives) a re-distribution of conserved and developed parcels, clustering both appropriately. The result can be a landscape planning regime that promotes the viability of conserved land, and the cost-effective and efficient development of more intensively developed land.

### *Brief History of the Tool*

Transfer of Development Rights programs were first established in the United States in the mid- to late-1960's. Initially, programs were established for the preservation of historical resources (heritage buildings, historic landscapes, etc.). By the 1970's, a number of programs had been established whose focus lay in other land use values as well. Programs have now been established with the aim of protecting environmentally significant areas, agricultural lands, recreation opportunities, even marble and minerals extraction potential. Implementation of the tool has become less an issue of the *type* of resource being protected, and more one of the *process* of protection.

Like related tools and programs (conservation easements, Purchase of Development Rights), Transfer of Development Rights arose out of the principle of being able to sever the development potential from the other interests in a piece of land. The underlying assumption is that the threat to the valued landscape can be significantly mitigated if the primary pressure (intensive development) is re-directed.

As of 2007, there were at least 181 programs operating in the United States, which had conserved over 300,000 acres of valued landscapes (Pruetz and Pruetz, 2007). A minority of programs were established with initial goals that were non-preservation (land development, redevelopment and rehabilitation of low-income housing), but the vast majority sought some type of land preservation (Kaplowitz et al, in press).

Canada has been slow to adopt the tool for a variety of reasons, not the least of which is a lack of awareness. The most firmly established and comprehensive program in Canada is in Vancouver, BC, a program focused on protection of urban historical resources. Currently, the most activity (discussion, community demand, research, pilot projects, and provincial government attention) is in Alberta, though a comprehensive[2] program has yet to be established there. The nature and extent of Canadian consideration of the tool is the focus of *Current Applications and Interest in Canada* below.

### *WHY COMMUNITIES[3] TURN TO TRANSFER OF DEVELOPMENT CREDITS PROGRAMS*

It is important to note that Transfer of Development Credits programs are community-based tools. Though there are regulatory, market, and industry facets, they are primarily administered at the local government level, and are first and foremost a community-based tool. For that reason, it is helpful to understand some of the reasons why *communities* have been turning to the TDC tool.

*Coordinating conservation goals* – Often it is difficult to implement a single program that can achieve multiple, coordinated goals. For example, local agricultural land conservation programs are often managed separately from ecological conservation programs. TDC programs recognize that individual parcels often have a variety of conservation values, and can accommodate those in one program.

*Pressure for conversion* – As noted earlier, TDC programs are explicitly designed to assist regions that are experiencing pressure to convert valued landscapes

[2] A "comprehensive" TDC program is one that includes a system for transfering density credits from a conservation area to a development area, an open market on which credits are bought and sold, and a legal mechanism that restricts future land use on the title of the conservation property.

[3] The term 'community' is used here primarily in a literal way ("a group of people living together in once place", Paperback Oxford English Dictionary 2002), but also in a broadened way in the sense that that group of people is represented and supported by an extended community of governments, associations, non-government organizations, etc.

into other land uses. The tool essentially harnesses the power of the increased development and directs it toward matched conservation. Therefore communities who have seen the negative effects of high development pressures are drawn to a tool intended specifically for their circumstances.

*Enduring solutions* – It is one thing to talk about accountability to future generations, and entirely another to act effectively on their behalf. Many landscape conservation solutions, both private and public, are viewed by communities as being temporary. The inclusion of a device to ensure conservation values are protected beyond the next Council, development proposal, or business plan gives community members a sense of comfort that the framework to conserve their valued landscapes will endure.

*Pushing past zoning* – Zoning is a critical tool, and one that TDCs are very dependent on. However, communities are often frustrated by the inability of zoning systems alone to conserve valued landscapes, despite supportive policy direction that may exist in the statutory plans. The focus on development, careless re-zoning, regulatory limitations and the command-and-control nature can work against community-based efforts to articulate and implement the conservation component of their community vision.

*Equitability* – When a community chooses to conserve valued landscapes, there is often a sense that someone has suffered individually, bearing a disproportionate portion of the burden on behalf of society. Zoning creates 'winners' and 'losers' in terms of potential for economic gain. With the use of the TDC tool there is an economic incentive to conserve (payment for TDC credits), and an economic incentive to develop (increased or 'bonused' development density) giving community members a sense that opportunities are equitable for all landowners.

*Cost-effectiveness* – After communities have identified the landscapes that they consider to be valuable in the current state, and determined they would like to retain them that way, the challenge arises in how to fund the tools and approaches the community has available. More traditional approaches, such as buying land, buying development rights, expropriating (perhaps with compensation) are all viable tools and potentially important parts of a diverse strategy, however; what draws communities to the TDC tool is the ability to see conserving landowners and developing landowners receive financial gain through a means other than the public purse. In the case of Transfer of Development Credits programs, the economic drivers are 1) the increased value of the developable land to the developer, and 2) the residual cost passed on in a dispersed way to the individual buyers.

*Local, tailored solutions* – Every community is unique, as are the valued landscapes and the community values. The ability to tailor a conservation program specifically to the needs and opportunities within a community increases the applicability, chances for success, and personal and community buy-in to the program.

## Implementing a TDC Program

As described above, a Transfer of Development Credits (TDC) program seeks to move intensive development from landscapes at risk from such activities to landscapes better suited to those land uses. It does so by facilitating a market-based transfer of that development potential, and perpetual conservation of the at-risk landscape.

Every example of the Transfer of Development Credits tool is different, but they share some common elements, including four basic program components and five basic implementation steps.

### TDC PROGRAM COMPONENTS

Fundamentally speaking, a Transfer of Development Credits (TDC) program has four basic components:

- *Sending area* - designation of the area which is targeted for increased conservation
- *Receiving area* - designation of the area which targeted for increased development
- *Transfer system* - development of a system which facilitates the valuation and transfer of development potential from one parcel to another
- *Program administrator* – an oversight body that develops and maintains the principles of the program and use of the tool

#### Sending Area

Generally, the motivation behind the establishment of a Transfer of Development Credits (TDC) program is concern over a valued landscape which is facing significant demand for conversion due to development pressures in the area. Those landscapes are included in a TDC program as ‘sending’ areas, or areas from where the development potential will be transferred. Sending areas are often viewed as ‘conservation areas,’ and there may be several such areas associated with a single TDC program.

The core ‘value’ of these parcels or regions may be ecological, agricultural, historical, industrial, recreational, or other (or some mix). This determination is made by the community, generally through a municipal planning process, and supported by a deliberate and credible process of assessment.

Typically, sending area parcels are at risk because of their depressed economic power. They may have a degree of economic weight (agricultural production, sustainable timber harvest, cultural tourism, etc.), but to a much lesser degree than the economic opportunities that are inciting land conversion (residential development, commercial/industrial activity, etc.).

Like all areas within a TDC program, sending area parcels are generally assigned development ‘credits’ based on some standardized process and/or criteria. Through the TDC program, sending area landowners are able to sell their development credits to landowners/developers in the receiving area. A legal instrument (generally a conservation easement) is used to perpetually preclude the intensive development of the parcel after the development credit has been transferred away. Generally, sending area landowners also have the ability to use their development credit and build on their property subject to the zoning restrictions in the area.

Thus, a sending area parcel can increase its economic weight by virtue of its conservation value.

### Receiving Area

The corollary to the sending area is, of course, the receiving area; the area to which the development potential taken from sending areas is assigned. Receiving areas have a base allowable development density, but have the additional opportunity of increased development potential (i.e. more lots per parcel, more stories per building, etc.) by acquiring development credits from sending areas. The results are not necessarily ‘high-density’ developments, but rather *higher density* than would otherwise be allowed. In general, receiving areas are much smaller in spatial extent than sending areas, and potentially some distance away.

Similar to sending areas, receiving areas’ suitability is determined by the community through a municipal planning process, one supported by a deliberate and credible process of assessment. Receiving areas may be deemed appropriate by virtue of their proximity to existing development, ease of servicing, limited conservation value, or other related factors. In many cases, receiving areas become ideal because of an opportunity (development proposal, visionary local developer, etc.), but it must still fit into the overall vision and plan for the community.

Contrary to sending areas, receiving areas have a significant economic weight, and are generally characterized by high value development such as residential construction, industrial operations, etc. For this reason, they have the ability to absorb the cost of acquiring development credits into their cost structure with limited impact.

Whereas sending area landscapes are the motivation for a TDC program, receiving areas are the driver; only areas with a significant level of development pressure will have the opportunity for conservation activity through a TDC program.

### Transfer System

At the core of a Transfer of Development Credits (TDC) program is the ability to transfer – and provide compensation for – the development potential from one parcel/landowner to another via an open market mechanism. Although each program has its unique flavour, every program includes a process for establishing the relative value for the development credits versus the development bonus, and for facilitating the exchange between the sending and receiving parties.

Many programs use a simple one-to-one credit ratio when outlining how many credits are available on a parcel of sending area land, and how many credits are required for each additional receiving area development unit. However, many use a differential (one-to-many or many-to-one) ratio. In either case, the transfer system needs to establish the protocols for calculating these ratios in individual cases.

Transfers are not always simple market transactions, and the transfer system may provide opportunities to assist in the development credit transfer. Possibilities include the establishment of a credit 'bank' and the promotion of third-party brokers.

### Program Administrator

Transfer of Development Credits programs are not self-organizing. Once a program is created, it needs on-going administration, and perhaps more importantly, the ability to adapt. This body oversees such functions as coordinating the program with the overall planning program[4], recording transactions, registering restrictive legal instruments on the land title, tracking the success of the program, promoting the program, etc.

These functions are most often executed by some arm of the local government, generally the local planning department, local agricultural services department, historical resources society, or other. In the case of multi-jurisdictional programs, it may be a higher level (provincial/state) agency, and in these cases may have been established solely for this purpose.

## TDC IMPLEMENTATION STEPS

In an operational sense, the development of a TDC program has five primary steps:

- Determine the need / desirability for a TDC program
- Initiate pubic consultation
- Identify TDC 'sending' and 'receiving' areas
- Create a development 'credit' system

[4] In Calvert County, Maryland, developments in the program have roads and home sites are approved by the Agricultural Preservation Board.

- Identify a mechanism(s) for extinguishing development potential on conservation parcels

### Determine the Need/Desirability for a TDC Program

Although not strictly part of the actual Transfer of Development Credits program, the work leading up to the establishment of a TDC program is extremely important, and may be the difference between a successful and an unsuccessful program. It may also identify that a TDC program is not appropriate for a given community. Such feasibility review may include pre-studies, and review of overarching plans.

#### Background Studies

Not all TDC programs conduct background studies in support of the development of their program, but a recent review of 52 Transfer of Development Rights (TDR) programs in the United States found that background studies were positively correlated with success (Kaplowitz et. al, *in press*). That study specifically noted the desirability of an analysis of potential market (estimating potential bonus development and associated density transfer ratios), the optimal character and size of sending areas, and the most promising approach to formation of receiving areas. Additionally, assessments of the threats to the valued landscapes, and quantification of those values, and investigation of potential participation incentives can be extremely important in planning a TDC program.

Several of the programs reviewed by the authors noted the value of 'build-out scenario' studies. These helped to quantify and visualize potential futures, many of which were fundamentally unpalatable to the community when presented and led to support for tools (like TDCs) aimed at mitigating those issues.

#### Compatibility of Overarching Plans

Existing statutory municipal plans may or may not be conducive to the conservation/development approach of a TDC program. Land Use Bylaws and Municipal Development Plans may be technically deficient in terms of supporting TDC programs (and need to be harmonized), but more importantly, it must be clear that the goals of a conceived TDC program and those of the overarching plans are compatible.

For example, zoning may not be conducive to sending and receiving area designations, or conservation goals may not be adequately articulated. Research indicates that most programs are focused initially on land preservation (82.5%) rather than land development (45.6%), and that having multiple goals does not correlate with the success of a TDC program (Kaplowitz et al., *in press*).

Finally, it is important to note that TDC programs are still subject to the existing municipal and provincial regulatory structure. For example, developments in receiving areas must still adhere to building standards, large scale developments may trigger environmental assessment requirements, and Water licenses must still be acquired according to provincial legislation.

### Initiate Public Consultation

Several of the programs reviewed by the authors indicated that public consultation was perhaps the most important step. One program (Larimer County, Colorado) dispensed with other studies to focus completely on public communications and engagement in the early stages of program development.

Especially in the Canadian context where the tool has not yet been fully applied and is mostly unknown, early communication and engagement can be critical to dispensing myths and identifying shared goals. Key audiences are the landowner community, the development community, and the conservation community. Key tasks may be polling to understand current associated attitudes, and extensive two-way consultations to raise awareness and establish expectations.

### Identify TDC 'Sending' and 'Receiving' Areas

The next step in developing a Transfer of Development Credits program is identifying the land base to which the program will apply, including specifically the sending and receiving areas.

Each municipality needs to establish the area to which the program will apply, even if it is a multi-jurisdictional program, as individual zoning and statutory plans must coordinate with the TDC program. Some programs will apply to the entire municipality, and some to only a portion. In the latter cases, the TDC tool may be detailed in a sub-regional plan or similar document. Regardless, the area chosen must be clearly defensible under the objectives of the guiding documents. For example, if the goal is agricultural land protection, it should be clear that protecting agricultural land in the chosen sending area will support that goal.

It is important to remember that Transfer of Development Credits programming is not a replacement for zoning[5], and is in fact designed to complement a zoning approach. When sending areas and receiving areas are chosen, that should be reflected in supportive changes to zoning descriptions in statutory plans. As well as the technicalities of TDC implementation, these plans would establish related zones (e.g. 'Agricultural Conservation Zone', 'TDC Development Zone', 'Open Space Protection Zone', etc.) and the associated allowable uses.

A change in the actual zoning (i.e. down-zoning) may or may not be required in one or both of the sending and receiving areas. In areas where the current zoning already supports the goals of the program (e.g. low density) likely no change will be required in either area. However in areas where there is currently relatively high

[5] Zoning is the public regulation of land and building use to control the character of a place, implemented through zoning by-laws. Such by-laws divide municipalities into different land use zones (e.g. urban, country residential, industrial, agricultural, etc.), detailing allowable uses such as number/type of structures, lot sizes and dimensions, parking requirements, building heights, etc.

density allowed in one or both of the areas a down-zoning may be required in order to facilitate the transfer of credits.

### Sending Areas

There are a number of choices to make in establishing a sending area. First, it should obviously reflect the principles behind the TDC program; i.e. if the goal is to protect agriculturally valuable land, the sending area should be chosen on that basis. Background studies, as described above, are a critical support for this step.

Different programs use different methods for delineating the sending area(s). Some identify a broad brush region that collectively has the values the program seeks to protect. For example, Montgomery County, Maryland identified a loosely demarcated Agricultural Land Reserve, which includes a variety of agricultural land types and parcels. Other programs explicitly identify target parcels to be included as sending areas.

From the perspective of a sending area, participation in a TDC program may be mandatory or voluntary. For example, program developers may structure it such that a sending area landowner may enter the program and put his/her credits on the 'market', or they may choose to stay out of the program, and simply develop to the extent allowable under the region's zoning. Other programs, may dictate that any development in the sending area (i.e. of the base credits) must be subject to the TDC program.

Similarly, participation may be by simple virtue of being within the zone, or sending area landowners may *apply* to be a sending area. In these cases, program administrators may reply to a request by a landowner for an evaluation of the property. In some cases (e.g. Calvert County, Maryland), a given parcel may be submitted by a landowner for consideration as either a sending area *or* a receiving area parcel dependent on location in the county.

### Receiving Areas

There are a number of choices to make in establishing receiving areas, as well. A key consideration is ensuring the amount of receiving area development opportunity does not overbalance the sending areas. This is a concern in two senses. First, if there are too many credits available for sale relative to opportunities to use them, the price will naturally be depressed, and transfer activity will be low or non-existent as landowners wait for improved opportunities. For example, Montgomery County, Maryland suggests that there should be one sending credit available for every two receiving credits required. Second, if the available opportunities are not carefully balanced against the volume of credits available for transfer, it is possible to promote *more* development impact than would otherwise happen in the absence of the program.

In general, receiving areas are much smaller and more proximate to existing towns or development centres than the associated sending areas.

Participation in the program for increasing density on receiving area lands must be mandatory. Simply put, if a developer can choose between paying for credits in order to develop or not but receive the same density, the choice will be quite clear and the program will die. However, designing opportunities within the receiving area is more than simply tailoring the cost of the credits, as program developers need to look to other incentives as well. For example, Boulder County, Colorado, provides developers in TDC receiving areas the opportunity to meet informally with the Commissioners (i.e. local government council) to present and get feedback on their development proposal early on, getting important signals on the features that will or will not be met favourably before they invest resources in developing them.

It is important in the receiving area planning to ensure that there is not competition between incentive programs. If other incentive programs provide potentially more-achievable methods for increasing development opportunities, both programs may suffer. This actually represents an opportunity, as well. For example, in Larimer County, Colorado, they have increased the density bonus beyond that achievable solely through the TDC program for developments which meet certain affordable housing criteria.

Finally, receiving areas – especially those involved in the early stages of programs – are often chosen opportunistically. Two potential receiving areas may see Area A as better meeting the program criteria, but Area B with a willing and visionary developer. In this case, Area B may be the better place to focus receiving area activity.

### Create a Development 'Credit' System

TDC program developers must implement a system which facilitates the valuation and transfer of development potential from one parcel to another by assigning credits to related sending and receiving area parcels, identifying the exchange ratios at which they are transferred, and relating this system to the existing zoning/re-zoning process. It is critical to have the landowner and the development communities intimately involved throughout this step.

#### Credit Ratios and Assignment

Transferable development credits need to be assigned to the sending and receiving area parcels in a fair and equitable way, but in a way that also promotes the start up and continuation of the TDC program.

Program designers need to determine how many credits a given parcel of sending area land will receive, and how many credits a receiving area developer needs to acquire to increase the development density on their parcel. The simplest programs (the minority) use a one-to-one ratio where each parcel is assigned a single credit, and each additional building unit in the receiving area requires a single credit.

Most program designers choose more complex systems. In these cases, multiple credits may be assigned to sending area acres, and likewise multiple credits required for each additional unit on a receiving area parcel.

Many programs begin with an initial down-zoning whereby all parcels in the sending area are reduced to the same base development potential to maximize the ability to protect the valued landscape. For example, the base development potential may have been 1 unit per 40 acres, and that is changed to 1 unit per 160 acres. Some programs choose at that point to convert the 'lost' development potential to credits, and initiate the allocation of credits in that way.

A program may establish that the sending area has a base credit ratio (e.g. two credits per acre), but then 'bonus up' based on the existence of key landscape features on the property. For example, Larimer County, Colorado, provided a starting allotment of credits based on one credit per two acres. However, beyond that, they increased the number of potential credits based on the presence of regional recreation trails or wildlife corridors, agriculture preservation opportunities, recreation and education opportunities, scenic or historical values, vistas of community importance, and existing uses and historical development approvals.

### Credit Valuation

While there is no set value (nor valuation methodology) for development credits, when considering credit valuation program designers must realize that the values have to provide enough incentive that both the buyer and seller are willing to participate in the transaction. The buyer of credits needs to at least recoup but preferably profit from the purchase of the credits. The seller of the credits needs to believe they have received a fair price for the development credits.

Brandywine Conservancy (Horner et al, 2003) in an effort to determine the values at which a TDR program might work most effectively in southeastern Pennsylvania held a series of focus groups with the local community including developers, planners and real estate professionals. The first item they determined was there were two landscapes (which they refer to as markets) in their area that provided the most opportunity for the successful application of TDR's. Across sending and receiving areas, with and without TDR's in both landscapes the following market conditions were identified:

- Raw land characteristics
- Raw land values
- Residential development characteristics
- Residential development values
- Potential sale market for sending parcels

They also determined three credit ratio scenarios for each landscape. Comparing these conditions under each of the scenarios for both landscapes the values acceptable to sending area landowners were determined. The same process was repeated for the receiving area landowners. This analysis determined that on both landscapes the value sending area landowners were willing to accept was less that the value receiving area landowners were willing to pay for development rights resulting in significant opportunities for sending and receiving area landowners to negotiate satisfactory prices.

This study, in one region, showed that the difference between the lowest value landowners would accept and the highest value developers would pay for a development right was $37,308 depending on conditions and scenarios. So as one can imagine values vary dramatically between programs. This variation is largely a result of the difference in land/development values of various regions, and the variety of credit computation systems. For example, one program may have a value of $5000 per credit, and another $1000 per credit, but if the latter program requires 10 credits per additional unit in the receiving area while the former requires only one, the $1000 credits are in fact 'more expensive' to the developer than the $5000 credits.

Although TDC programs are all market-based, the degree to which that market is influenced may also affect credit prices. In some cases, local governments purchase the majority of credits, doing so for a set price. In those cases, other transactions tend to mimic the prices offered by the local government.

#### Credit Banking and Brokering

The credit transfer system may be entirely unassisted, or it may be brokered. Because in some cases a separation in time exists between when a given credit buyer is looking and when a credit seller is offering, the local government may set up a credit 'bank' which purchases credits from sending area landowners and sells them to receiving area landowners. These systems reduce the administrative burden on program participants, and may be designed to function as advocates, information sources, administrators, and fund-solicitors for the program as a whole.

Kaplowitz et al. (in press) found that the existence of credit banks was positively associated with success, but went on to note that this may be due as much to the supportive functions these institutions have come to play (informational, credibility-establishing, promotion, program administration).

Program designers may also seek to facilitate the emergence of brokers. These third-party, non-government entities can perform some of the same functions in terms of facilitating credit transfers. In these cases, the burden for the local government is greatly decreased, and the process becomes even more market-sensitive as brokers are another layer of private enterprise. However, brokered systems are not able to provide the ancillary support, promotion and programs that TDC banks can, and can be less stable as individual brokers come in and out of the market.

### Identify Mechanism(s) for Extinguishing Development Potential on Conservation Parcels

The ability to augment development density (bonusing) is not a new technique in Canada, nor is the ability to create credit systems. What sets Transfer of Development Credits programs apart is the certainty and longevity provided by perpetually extinguishing the development potential on sending area parcels.

Because zoning systems are subject to continual change, and cannot bind future councils, they create a fickle and shifting base on which to build a conservation program. TDC program designers must identify the development-extinguishing tool that can provide that certainty, and match it to the program goals. For example, conservation easement legislation in various provinces provides a perpetual conservation mechanism for ecologically valuable land which runs with the title of the land, and which is insulated from the vagaries of zoning. Other options for conserving agricultural (or historical, cultural, etc.) landscapes may exist, but need to be clearly identified on an individual jurisdiction basis.

It is important that the restrictive mechanisms be capable but not excessive. The advantage of conservation easement-style tools is that they restrict specifically those land use activities which imperil the conservation values of the land, but allow other land uses to persist, thereby preserving the base economic viability of the sending area parcel.

TDC program designers must also identify if the local government, provincial government, or a third party (land trust) is going to hold the conservation easements. Many American programs see the local government holding the easement, but third-party examples exist as well. The key considerations are whether there is a local land trust willing and able, and whether the municipality wants to enter into a 'perpetual' agreement with that organization.

### *LEGAL CONSIDERATIONS*

(adapted from Kwasniak 2004)

When considering the use of Transferable Development Credit (TDC) programs in Canada, the legality of their creation and implementation is, of course, of considerable interest. Although there is currently no overriding legislation in any province that expressly authorizes TDC programs, Kwasniak (2004) considered the grounds on which a TDC program could be challenged using Alberta as the test case and found significant evidence supporting a municipality's authority to create a TDC program.

#### Jurisdiction

Kwasniak reviewed three legal areas to determine if municipalities would have jurisdiction to create and implement a TDC program: case law, natural person powers and municipalities' land use responsibility. While she specifically looked at Alberta, her approach to assessing jurisdiction could be used for other provinces.

##### CASE LAW PRECEDENT

The first and likely most important question is whether a municipality has the jurisdiction to create and deliver a TDC program. Municipalities are created by statute and as such have only the powers expressly or implicitly conferred to them in legislation by the province. Each province has legislation that describes all powers granted to municipalities. In general, case law shows that powers granted to municipal governments should be interpreted broadly and purposively. The exception occurs if a grant of power is specifically described and then interpretation of that grant is more limited. In broad terms, since there is not a specific statement limiting a municipality's power with respect to a TDC program and assuming its creation is not unreasonable, uncertain, discriminatory, made in bad faith or for improper purposes then a municipality likely can implement such a program.

#### Natural Person Powers

While not yet subject to judicial review, the Natural Person Powers may also allow municipalities to create and implement a TDC program. 'Natural person powers' is authority similar to those held by individuals, giving them the flexibility to conduct their affairs without the need for numerous specific legislative provisions. These powers include the power to enter into contractual agreements, purchase land, etc. where they have not been given explicit authorization by legislation. Many provincial governments have now chosen to delegate natural person powers to municipalities.

#### Municipality Responsibilities

Legislation that governs municipalities' powers generally provides that municipalities are responsible to plan, coordinate, regulate, manage or direct land use now and into the future. This legislation may either implicitly or explicitly state the municipality may or must address environmental concerns and protect agricultural lands. TDC programs are can be used to assist in meeting these responsibilities.

### The Program

If a municipality is confident that it has the authority to enter into a TDC program, Kwasniak (2004) determined the municipality must then consider their ability to participate in the following program components.

#### A process for determining land use or permit applications and setting out permitted uses.

Municipalities are generally required by the province to determine a method to make decisions on applications for development permits, and to issue development permits for any development.

#### A process for identifying sending and receiving districts and setting out permitted uses in the districts to control density.

Municipalities are generally required by the province to divide their land base into districts that have prescribed land uses that may or may not have associated conditions.

### A CREDIT SYSTEM FOR SENDING AREAS.

Case law provides support for a municipality to create a credit system. Case law has shown higher courts take a 'broad and purposive' approach to interpreting municipal powers. When other "creative" systems for regulating and controlling land use (e.g. a lottery system for limiting commercial growth in Banff) have been challenged, the courts have found implied authority by virtue of the legislation conferring powers on municipalities to regulate and control land uses.

While a credit system is not explicitly authorized in most provincial municipal legislation, there is support for the creation of a credit system for TDC purposes. As mentioned above many provinces grant municipalities' natural person powers – through which a municipality can conduct business as a natural person would even without specific authorizing legislation. It follows that municipalities could enter into such as system since an individual could.

### A PROCESS FOR TRANSFERRING DENSITY FROM SENDING TO RECEIVING PROPERTIES.

While some municipal acts may explicitly allow density transfers, many municipalities currently engage in density transfers without explicit legislative authority to do so. In the past, municipal review boards have heard and settled issues with respect to density transfers without questioning the actual ability of a municipality to enter into such arrangements. Based on this and considering the 'broad and purposive' approach to interpreting municipal powers, municipalities likely have implied authority to formalize density transfers.

### A LEGAL MECHANISM TO SECURE LAND USE RESTRICTIONS ON SENDING PARCELS.

There are currently at least three options for legally securing land use restrictions in Canada each with its own opportunities and limitations.

1) *Conservation easements*[6] are an option as their main purpose is to conserve land with a specific value. Conservation easements are registered on title in perpetuity, are able to restrict development, and can be held by a municipality or a qualified organization. Conservation easement use in TDC programs will be limited to the purposes outlined in the provincial legislation. For example Ontario's Conservation Lands Act (2005) explicitly includes the conservation of agricultural lands compared to Saskatchewan's Conservation Easements Act which does not.

2) *Restrictive covenants* may be an alternative mechanism to restrict development where conservation easements are not appropriate. A covenant is a promise made by one landowner to a neighbouring landowner not to do certain things on his or her land (e.g. not to build in a certain area) (Atkins et al, 2004). A municipality must be certain that the land a restrictive covenant is placed on meets the following conditions:

[6] Conservation easements (CE) are legally binding agreements registered on the land title, between a private landowner and a conservation organization or a level of government. CE's restrict future land use with the intent of protecting environmental values as described in legislation.

*(a) It must be restrictive or negative in nature (e.g. it can require a landowner to refrain from doing something but cannot require a landowner to do something),*
*(b) there must be two pieces of property, adjacent to or within close proximity of one another, that are owned by different owners where one owner benefits and the other is burdened from the covenant,*
*(c) the covenant must benefit the <u>land</u> not just the owner of the land,*
*(d) the covenant must reflect an intention to annex the covenant to the land benefited by the covenant, and*
*(e) all future purchasers must be given notice of the covenant in order to be bound by it; registration on title is considered notice.*

3) Most provinces have a heritage or historical resources act ((Atkins et al, 2004) through which an agreement or covenant may be registered on title relating to the preservation or restoration of any land or building. While these acts are quite variable in procedure they often consider heritage or historical resources to be works of nature or humans that are valued for palaeontological, archaeological, prehistoric, historic, cultural, natural, scientific or esthetic reasons.

### Can TDC Programs Legally Happen?

It is highly likely that municipalities can create and implement TDC programs. While Kwasniak's (2004) conclusion was based on the Alberta situation, similar reviews could be done for each province. Similar analyses in other provinces would provide guidance nation-wide with respect to the legal ability of municipalities to deliver TDC programs.

## FINANCIAL CONSIDERATIONS

One aspect that has proven difficult to determine in a generalized sense, is the financial cost of a Transfer of Development Credits programs. This is due to the very specific economic and financial circumstances in each program. The search for data such as an "average" credit price is confounded by extreme variability based on varied land prices, credit ratios, bonusing systems, etc.

Having said that, it is possible to identify the key cost pieces, and describe some of the considerations within each.

*Administration and Planning* – This is perhaps the most difficult piece to estimate as many of the TDC-related administrative activities would fall within the duties and responsibilities of municipalities. Staff must conduct planning, set zones, receive/consider/approve sub-division and development applications, plan for conservation areas, etc. based on the pre-existing goals of their community plans. The extent, to which they do this, and the associated cost, varies widely. In the initial stages, there would likely be an increased time commitment on the part of municipal staff.

*Background studies* – There are a number of background studies which are required in terms of preparing for and implementing a TDC study. In the case of an agri-environmental program, some of the most important would be: agricultural communities/values mapping, environmentally significant areas/resources identification, build-out scenario development, and real estate valuation studies. Again, not all municipalities face these costs in setting up a TDC program since they are broad planning support studies, and some communities may have them in place already. Feasibility studies and communication plans specific to TDC programs may also need to be in place. Each study could be in the range of $10,000 to $50,000.

*Public Consultation and Awareness* – This is likely the most underrated cost associated with TDC programs. Some of the consultation and education around TDCs may take place in the process of developing municipal plans and land use bylaws. However, TDC specific consultation and communication has arisen in our review as critical to program success. This process can be protracted, dependent on the public acceptability of the proposed program, conducted in-house or contracted; all factors which affect the costs. Regardless, this can and should be an area for investment.

*Transaction Costs* – The cost of actually transferring the credits from one landowner to another has at least three facets: the administrative tracking at the municipal level (described above), the cost to the 'conserving' landowner, and the cost to the 'developing' landowner. In the case of the latter two, it is more a question of a cost/benefit assessment – the benefits of entering into the market-based transaction must easily outweigh the costs of accounting, legal, development, etc. costs. In all cases, that is an individual set of review criteria, but the credit system must be designed with specific reference to the local situation.

*Management of Conservation Lands* – Once the land in the 'sending' area is subject to a development-restricting device, there are the on-going costs of stewarding the land. Depending on the process for acquisition, there could be up-front costs such as baseline reports, legal review of easement documents, etc. These may be borne by the municipality, or they may fall to the land trust holding the easement in the case of a third-party agreement. Conservation easements leave most of the land management responsibility with the landowner, so there is only the cost of monitoring. If a conservation easement is simply a "no-subdivision" easement, then the on-going stewardship costs are minimal. Management fees may be paid to a land trust managing a conservation easement on behalf of the municipality. These stewardship costs are a fraction of the cost a local government would face buying and managing the land as a park, government pasture, etc.

*TDC Bank* – In some cases, TDC banks are established to facilitate the transfer of credits from willing sellers to willing buyers. These banks have an administrative structure to themselves which would incur costs. In several U.S. instances, they have also evolved to be the promotion / administration body for TDCs in the area. Like other brokerage-type operations, these banks generally charge a transaction fee to offset the cost of the operations.

## APPLICATIONS IN THE UNITED STATES

As early as the 1950's in the United States, places like Maryland were seeing rapid land conversion away from agriculture. In an effort to slow this trend, preferential tax treatments for agricultural land were applied. However, the loss of agricultural land continued and governments started to look to other tools.

New York City was the first American jurisdiction in 1916 to use density transfers; it was also the first to adopt a TDR mechanism in 1968 to protect historic buildings. The tool began being applied to rural landscapes in the late 1970's early 1980's.

With a goal of better understanding the details of various programs designed to protect landscapes of agricultural and environmental value the authors selected four programs to visit. The authors visited staff in each county and depending on the type of program and the time available meetings were also set up with other "land preservation program" staff, developers, real estate agents, development rights brokers and independent planners.

### Larimer County, Colorado

Larimer County's Transfer of Density Units (TDU) program formed as a result of a long term desire to maintain the separation of two cities and to keep the rural landscape between them intact. Public opinion strongly supported a "voluntary" program. If a landowner chooses not to participate in the program they can choose between not developing or developing at the currently allowed for density, which is lower than the number of TDU's they could sell.

#### *PROGRAM GOALS*

The goals of the program are to protect significant natural resources, community buffers, corridors for wildlife migration, hiking trails, agriculture, park sites, historic landmarks and / or important scenic views.

#### *SENDING AREA DESIGNATION*

Sending areas could be those lands located on the rural landscapes between Fort Collins and Loveland, Colorado. Since this program is geographically specific landowners know they have a possible sending area based on their location. As a voluntary program, landowners do not have to sell or transfer their density units. Landowners who wish to transfer density units and are in the sending area "zone" apply to become a sending area. To establish how many TDUs are available for transfer, the land is assessed based on criterion that supports the goals of the program. The more criteria the property meets the greater the number of density units available to transfer.

The TDU program is now complete. In seven years, 503 acres were protected in the sending area zone.

### RECEIVING AREA DESIGNATION

As a geographically specific program the receiving area was clearly indicated as the land to the north of Fossil Creek Reservoir. Two developers participated as receiving area landowners. The density of the development was increased between eight and 10 times what it would have been had the program not been used, with 721 TDUs being transferred.

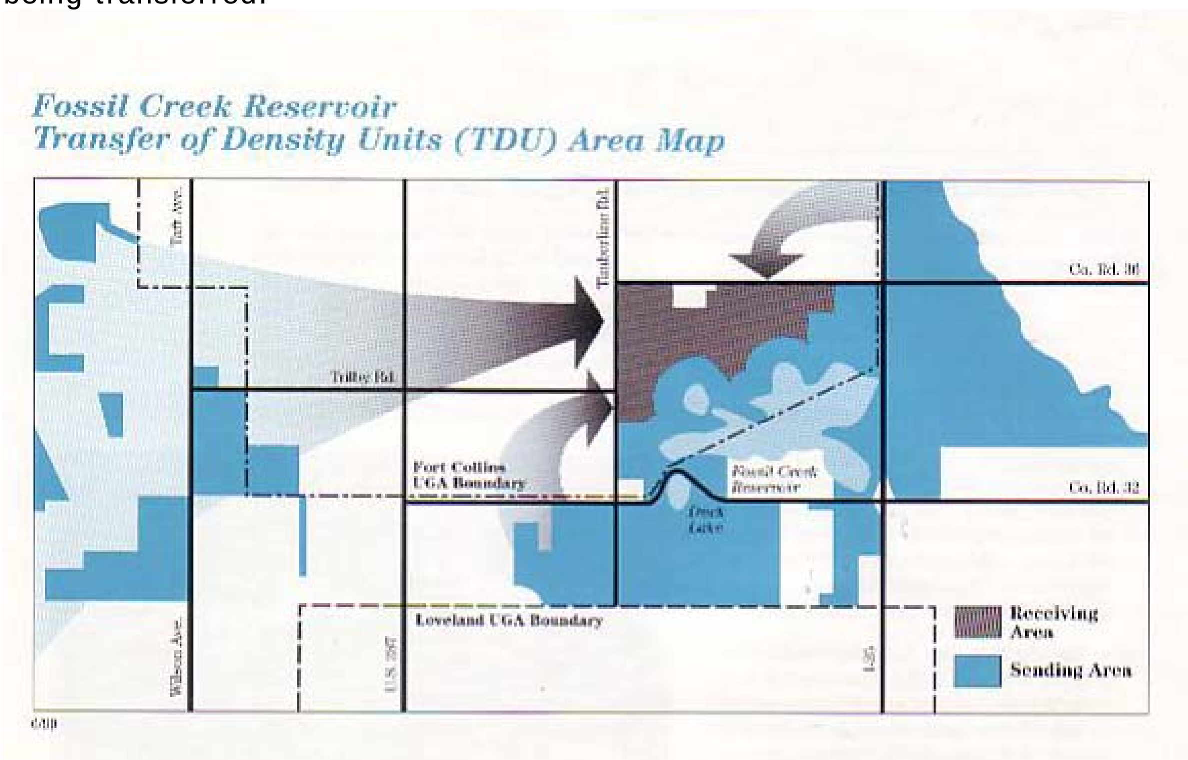



**Figure 1**: Fossil Creek Reservoir, Colorado, Transfer of Density Units (TDU) Area Map

### TRANSFER SYSTEM

Since participation in the Fossil Creek TDU program was voluntary the value of incentives for landowners and developers to use the program was essential to the success of this program. As incentives for participation, sending area landowners were granted a greater number of TDUs than number of units could have been developed at the current zoning (i.e. baseline determination was 114% of the current zoning). This baseline determination could be increased on sites with significant natural resources, community buffers, corridors for wildlife migration, hiking trails, agriculture, park sites, historic landmarks or important scenic views. Conversely the baseline TDUs could be decreased on sending sites of 40 acres or less, with low development potential, and / or a property location that is not complementary to the program goals and existing development. Once the number of TDUs was established the landowner received a certificate that was in effect for two years. Once some or all of the TDUs were sold, a covenant that restricts all future development of the sending parcel is registered in favour of the county on the land title.

The main incentive for the developer was a multiplier of 1.5 to 1 TDU purchased was applied. Essentially, for every TDU purchased the developer could build 1.5 units.

The price paid for TDUs by the receiving area landowners was privately negotiated and not of public record.

### *PROGRAM ADMINISTRATION*

This program is administered by Planning and Building Services Division of Larimer County.

## Boulder County, Colorado

Boulder County has a broad based program that is applicable to the plains portion of their jurisdiction (approximately 1/3 of the county). Boulder County began to address the loss of agricultural land in the 1970's through a variety of programs and eventually adopted a TDR program in the early 1990's that now works in conjunction with the other conservation programs. As of 2005, 338 TDR transactions had occurred resulting in over 5,000 acres protected under conservation.

### *PROGRAM GOALS*

The goals of the program are to protect lands with productive agricultural value or environmentally sensitive areas such as wetlands, rare plants or wildlife habitat.

### *SENDING AREA DESIGNATION*

With very limited opportunities, no subdivision developments occur in the county without the use of TDR's. Essentially any property over 35 acres that is undeveloped and unencumbered in the plains portion of the county is a sending area. Under the TDR program two TDR units per 35 acres can be transferred with an extra unit per 35 acres if an undivided interest in water rights is deeded to the county. The baseline density is one unit / 35 acres therefore by participating in the program the landowner can receive up to two bonus development rights. Landowners of 140 acres or less can choose to build one unit and transfer the remaining two units per 35 acres or they can transfer all their rights. Landowners of parcels greater than 140 acres can use any combination of on site development and transfers; not exceeding two units transferred per 35 acres and one unit built per 70 acres.

### Receiving Area Designation

Receiving sites are not pre-designated in this program with two exceptions – the unincorporated settlements of Longmont and Niwot. Other potential receiving sites are selected by assessing applications considering "performance" driven factors; for example if the site is near a major transportation artery and water and sewer is available it is likely candidate as a receiving site.

The county uses development standards equivalent to those of the nearest town or city. Once the development is complete it will be annexed into the neighbouring municipality. Platted TDR receiving site densities range from 0.75 – 2.0 acres per unit. Without TDR's, these same lands could only be developed at much lower densities of one unit per parcel (i.e. any parcels less than 35 acres in size and which are legal building sites cannot be subdivided further and can therefore only be developed with a single residential dwelling).

### Transfer System

In the spring of 2007, TDR's in Boulder County were selling for between $60,000 and $90,000 on the free market. One TDR is required for each unit built. Once the development rights are removed from a sending area a conservation easement in favour of the county is registered on the title.

### Program Administration

The program is administered, monitored and updated by the Planning Department of Boulder County.

## Montgomery County, Maryland

In the 1970's Maryland County considered the potential of development if the pace of land conversion did not slow down. It was determined that 3,000 – 5,000 acres could be developed annually. To counter this pace of change an Agricultural Land Reserve (ALR) was established. The zoning in the ALR was reduced from 1 unit per 5 acres to 1 unit per 25 acres. In an effort to make the down zoning fair a TDR program was implemented that allowed the landowner to sell the development rights that they could no longer develop as a result of the down zoning (e.g. before the down zoning a landowner with 100 acres could develop 20 units; while after the down zoning they could only 4 units therefore the remaining 16 units would be available as TDR's).

### Program Goals

The goal of Montgomery County's program is to protect the relatively large, intact Agricultural Land Reserve (ALR) to be available for the production of food. There are other programs that work within the ALR to encourage environmental stewardship and a strong agricultural industry on this land base.

### Sending Area Designation

All land in the ALR became the sending area in the program and all acres were treated equally with respect to how many development rights could be sold on each property regardless of landscape feature limitations.

### Receiving Area Designation

Receiving sites are chosen based on existing infrastructure (e.g. roads, water, sewage, etc.). Developers can choose not to purchase development rights but then must use current zoning and cannot increase density in any other way. By purchasing development rights a developer can increase the density of their project by up to 20% or higher if doing a condo or garden apartment project.

### Transfer System

Landowners in the ALR are not automatically a part of the TDR program; they simply cannot develop their land beyond one unit per 25 acres. To enter the program a landowner would place a conservation easement in favour of the county on their property. Each TDR easement creates four TDR's per 25 acres. TDR easements in Montgomery County encumber farm properties so that they cannot develop at a density greater that one unit per 25 acres in perpetuity. At this point in time one TDR per 25 acres must be retained (referred to as a Building Lot). If zoning were to change over time landowners who had entered into the TDR program previously could not appreciate higher density changes – essentially current zoning is locked in by a TDR easement.

The landowner can sell any number of development rights at any time. Each TDR is given a serial number as it is created and it is registered on title. All future TDR's on a property reference any previous TDR's sold on that property.

TDR easements simply strip the landowners' rights to subdivide if the zoning changes sometime in the future. As a result the landowner still retains all other rights and can enter into other conservation easements for other purposes. As a result secondary market has developed to consult to landowners on the options available to them as ALR landowners.

### Program Administration

The ALR and therefore the sending areas are administered by the County's Agricultural Services department. The receiving areas are administered by the Planning Department.

## Calvert County, Maryland

A comprehensive plan written in 1974 indicated the county would consider ways to preserve land. In 1976 a committee was created to review options for preserving land in response to rapid population growth in the early 1970's. The options they reviewed included down zoning, conservation easements, and transferable development rights. Around the same time a University of Maryland paper recommended that any option that was adopted should be equitable to all landowners. The options were presented at a series of farmer and community meetings after which 80% voted in favor of a transferable development rights program.

It was felt that such a program had to be designed by the people who would be using it. The county government provided the framework and then the community built the program within those guidelines. In the early stages of the program the entire county was down zoned and it was established that no rezoning in response to individual development applications would take place and densities could only be increased in receiving areas by using TDR's. The result was an automatic market for TDR's.

In the late 1990's the county completed a build out scenario under the current zoning that considered population growth and land use change over time if all possible building sites were used. A survey was mailed out presenting the results. A majority agreed that impact on the landscape would be too great if changes were not made. County wide down zoning was approved from one unit (or home) per five acres to one unit per 10 acres. In 2003 another down zoning was implemented to one unit per 20 acres.

### PROGRAM GOALS

The goals of the Calvert County TDR program have evolved over time as is evidenced by the addition of items E through G in Figure 2.

A. To offer an incentive for preservation of prime agricultural and forestry land.
B. To provide reimbursement to the landowner who voluntarily agrees to place agricultural and forestry use covenants on his land.
C. To utilize the free market system for financing agricultural and forestry preservation, thus avoiding direct cost to the taxpayers.
D. To guide development away from prime agricultural and forestry lands on which viable farming and forestry endeavors are practical.
E. To promote and preserve the identity of intact rural agricultural communities where working farms and managed woodlands predominate. (11/4/91)
F. To minimize potential conflicts between agricultural and non-agricultural land use by providing for a functional separation of the two. (11/4/91)
G. The purpose of the PAR Fund shall be to purchase, retire and permanently remove TDRs from the development rights market, thereby protecting additional farm land acres from development. (6/1/92)

**FIGURE 2**: Purposes of the Agricultural Land Preservation Program Rules and Regulations (Calvert County Agricultural Land Preservation Board, 2005)

### SENDING AREA DESIGNATION

A group of five volunteer citizens comprise the Agricultural Preservation Advisory Board (APAB) which promulgates rules, develops procedures and reviews all applications. To participate in the program, a landowner applies to the APAB to have their land designated as an Agricultural Preservation District (APD). Land zoned as Farm and Forest District by the County or located in Designated Agricultural Areas by the APAB are priority preservation areas. Land outside of the priority areas may still be eligible, but need to meet specific standards. All applications are reviewed based on present land use, soil classification and quality, as well as suitability for cropland and/or managed forestland. Once accepted as an APD, the land owner can sell one TDR per acre plus any bonuses they may be eligible for based on the development potential of the land and on whether or not any farm lots had been created in the past. If no TDR's have been sold, the APD designation can be removed after five years, by providing one years notice to the APAB.

The owner of a designated sending site retains the ability to build up to three houses at a ratio of one house / 25 acres (plus an original house if it exists). When in the program the APAB reviews and approves the building and road locations. Building houses in the program is a simpler process than on land not participating in the program. Another benefit to entering the program as an APD is that sending areas in the program are only taxed based on the residences on the land; the farm land is not taxed.

### RECEIVING AREA DESIGNATION

Receiving zones in Calvert County can only be located in Transfer Zone Districts (TZD) which includes Town Centres and Rural Communities. Five TDR's are required to build one unit.

### TRANSFER SYSTEM

The prices of TDR's in Calvert County are determined by supply and demand in an open market. The County also participates in this market through a Purchase of Development Rights Program. In the spring on 2007 development rights were selling for $9,000 on average. Sending area landowners can sell some or all of their development rights. A sale of any number of the TDR's permanently preserves the land and covenants are recorded.

### PROGRAM ADMINISTRATION

The Calvert County Planning Department administers the program.

## Transfer of Development Rights and Farmland Preservation

Transfer of Development Rights (TDR) programs have become a significant, but not ubiquitous, tool for the conservation of agricultural land in the United States.

Success in conserving farmland through TDR's varies dramatically, and the simple existence of a program certainly does not equate to success in terms of acres protected. For example, the American Farmland Trust did a review of TDR programs in 2000, examining 50 programs. They found three had been revoked, only 15 had protected more than 100 acres of farmland, only eight had protected more than 1000 acres of farmland, and 22 had yet to protect any farmland (American Farmland Trust 2001). It is important to note, however, that many of these programs did not have farmland preservation as a primary target (e.g. included in the 22 which had conserved no farmland was Palm Beach County, Florida, which had protected 6,573 acres of non-farmland).

One comprehensive review of American TDR programs found that most have a multiplicity of goals, but that the goal of agricultural land preservation was cited in 63.5% of programs, making it second only to environmental protection at 70.2% (Kaplowitz et al in press). Another review looking at the *primary* goal, found roughly two thirds targeted environmental protection, while roughly 20% targeted farmland preservation (Pruetz and Pruetz 2007) as their primary goal. That same review found that half the agriculture-focused programs were in Maryland and southeastern Pennsylvania.

As well as painting a picture of the use of the TDR tool in the United States, these numbers point to the tremendous importance of defining success. The trend for acres conserved within a program is usually erratic over time, especially in the first years. Programs singled out as particular success stories (conserving tens of thousands of acres) are generally older, and would have been considered "unsuccessful" in their first years.

As well, it is clear that TDR (and TDC) programs focused on conserving agricultural land need to very clear in their purpose(s). Programs which aim to protect agricultural land, or agricultural operations, or agriculture industry viability can be very different. One program the authors investigated through a visit had extensive agricultural land protected via a Transfer of Development Rights program. One participant in that program sought to expand his operation by building new chicken barns, a use not supported by the program as the agricultural conservation goals were very 'scenic' in nature. Another program intentionally developed no language around what agricultural activities were 'allowable' as they saw their agriculture industry constantly evolving, and had established the program to protect the *industry*.

## APPLICATIONS AND INTEREST IN CANADA

While many jurisdictions in the United States have been using Transfer of Development Rights (TDR) programs for many decades, such programs have been applied in a very limited manner in Canada and typically in urban settings. As described earlier in this report TDC programs are most effective when development pressures are high; therefore the fastest growing regions in Canada are most likely to be considering the use of TDCs.

Interest in TDC ideas in some parts of Canada began in the late 1970's. More recently there has been a resurgence of this conversation. In an effort to avoid the win–lose scenario often arising from zoning, TDC programs are seen as a more "fair" way of conserving valued landscapes or features. TDC programs generally grow from a community vision of what is important in their surroundings and offer a level permanence to land use decisions that zoning does not.

This section reviews six examples of TDC programs or TDC type mechanisms being applied in Canada and illustrates in each the TDC program components described in *TDC Program Components*, above. This is not an exhaustive review of Canadian municipalities but was a targeted review of regions facing high development pressure. The first section considers three urban examples, only one of which offers a comprehensive program. While there are no comprehensive TDC programs in Canada designed to conserve rural, agricultural or environmentally significant landscapes, the second section considers three rural applications of TDC type mechanisms.

## Urban Programs

### *VANCOUVER*

Vancouver has Canada's only active and comprehensive TDC program called the Heritage Density Transfer System. It was initiated in 1983 and amended to its current form in 1993 (Corvalis Consulting Group, 2002). It is used predominantly to protect historical buildings in designated districts but can be used for open space or park creation or to affect urban design. A main goal with this program is to make the restoration of historical buildings as financially attractive as redevelopment of the land.

#### Sending Area Designation

Sending areas are designated after the owner of an historical building and the city negotiate the financial incentive and consequently the number of development rights required to make retention/restoration of the building as financially attractive as redevelopment. Depending on the physical characteristics of the site and the existing zoning, development rights may be granted as:
Bonus floor space to be developed on site with the historical building;
The right to transfer residual (unused) density to another site; and / or
The granting of bonus floor space that can be transferred.

In exchange for the "heritage density" (development rights) the building owner agrees to complete specific rehabilitation activities which are recorded in a Heritage Revitalization Agreement registered on the land title. The density is made available for transfer when the rehabilitation activities have been completed or the owner of the historical building has provided the city a guarantee in the form of a letter of credit for 120% of the density to be transferred.

Available density is listed on the following website: (www.city.vancouver.bc.ca/commsvcs/planning/heritage/termsofuse.htm).

#### Receiving Area Designation

Receiving areas can be any site throughout most of Vancouver's "central area" that is not a sending area. The program description specifically names five districts within the central area and also dictates receiving areas can occur outside the central area under certain circumstances described by Council policy.

#### Transfer System

The transfer of the available density occurs on an open market between willing sellers and buyers. A density owner may sell a portion or all of their available credits at any time. Once any amount of density is sold it is registered on the historical building's title through a "Development Limitation Covenant". The price is dependent on supply and demand of available density in the city and is negotiated privately between the sending and receiving site owners.

#### Program Administrator

Vancouver's Heritage Density Transfer Program is administered by the Current Planning Group in the Planning Department of Community Services. The Transfer of Density Policy and Procedure has been amended 8 times since 1983 and went through a significant evaluation process in 2002 (Corvalis Consulting Group, 2002). The program is being reviewed in 2008 to evaluate the success of the Transfer of Density program and to develop policies and actions to support its long-term health ("Heritage Building Rehabilitation Program and Transfer of Density Review").

### *CALGARY*

The City of Calgary used a TDC-type mechanism in 1982. It was not a part of a larger program and has not been used again.

#### Sending Area Designation

The Calgary Chamber of Commerce Building was the sending area. The building, as a designated Historical Resource under the Historical Resources Act, had unused density rights (Leitch, pers. comm.).

#### Receiving Area Designation

The design of the Petro Canada Towers was larger than was allowed under the city centre zoning. In order to accommodate this design they purchased residual density from the Calgary Chamber of Commerce.

#### Transfer System

The Petro Canada Towers paid $2,491,995 to the Chamber of Commerce for density rights equivalent to four more floors and a shared Plus 15 (second-floor between-building walkway). The City then registered a restrictive covenant on the Chamber of Commerce's land title (Plouffe, pers. comm.).

#### Program Administrator

The density transfer from the Chamber of Commerce to the Petro Canada Towers was facilitated by the Land Use and Planning Department of the City of Calgary.

### Toronto

Toronto began its historical site inventory in 1973 (Pruetz). The city started applying TDC-type mechanisms to protect heritage buildings in 1976 through the City's Central Area Plan. The objective was to provide revenue to restore heritage buildings. Toronto's density transfer policy has been amended over time to the present where it is not heavily promoted. To achieve the original goals of density transfer programs the city now uses the Toronto Heritage Grant Program.

#### Sending Area Designation

Initially the program targeted historical buildings used for the performing arts and small sites no larger than 0.405 hectares. It was used to transfer density from St. Andrew's Church and manse to the Sun Life Assurance properties. In 1993 the plan was amended to exclude density transfer from Small Sites and to add Heritage Buildings with Significant Open Space with a focus on three buildings:

- Metropolitan United Church
- St. James Cathedral
- Campbell House

During this time of the plan, only the Campbell House was protected by way of transferring its density to the adjacent Canada Life block. The other two locations reported not being able to find a receiving site for their transferable density.

#### Receiving Area Designation

Any new development was eligible as a receiving site if they were interested in increased density or height and are willing to work with the owner of the capital facilities (e.g. historical buildings) that provided a community benefit as listed Chapter 5 in the Official Plan adopted in 2007. The relationship with the capital facilities (sending area) would be described in the development application and would be approved or not on an individual application basis. The City is not currently accepting any density transfer with respect to historical building protection (McCaw, Pers. Comm.)

#### Transfer System

The owner of the sending area enters into an agreement registered on title. The amount of compensation a landowner may receive is negotiated on an individual basis.

### Program Administration

Toronto's Heritage Preservation Services is responsible for the identification of heritage buildings and promoting their preservation. Development applications are accepted by the City Planning Department.

## Rural Programs

It appears that at least five Canadian jurisdictions have applied at least some component(s) of a TDC program in an effort to protect rural, agricultural or environmentally significant landscapes. The following are three for which the most detail could be gathered. The other two programs are in the Oakville and Scarborough – Rouge Valley areas in Ontario.

### *L. M. MONTGOMERY LAND TRUST, PRINCE EDWARD ISLAND*

This is a Purchase of Development Rights (PDR) program instead of a TDC program. The main difference between a TDC program and a PDR program is that the development rights (or credits) are effectively retired and not moved to another location for development purposes. The reasons for including it in this review are in both programs the number or value of "development rights" must be determined, and a mechanism to restrict land uses on the sending area after the density is used.

The L.M. Montgomery Land Trust in Prince Edward Island is in the process of expanding a Purchase of Development Rights (PDR) program. The Lucy Maud Montgomery Land Trust was founded in 1994 with the mission to preserve the working agricultural and coastal landscape of the north shore of Prince Edward Island.

#### Program Goals

The goal of the PDR program is to protect the L.M. Montgomery Shoreline – approximately 5 km of shoreline in the French River area (Sanford, pers. comm.).

#### Sending Area Designation

Six Hundred and twenty two acres on 11 parcels of private land have been identified as the priority area for the PDR program.

#### Receiving Area Designation

There are no receiving areas in a Purchasable Development Right Program.

#### Transfer System

In this instance the deed restriction the Land Trust is entering into with the landowner is very similar to an agricultural conservation easement, and in their proposal likens the program to a Purchase of Agricultural Conservation Easements (PACE) program. The landowner will be paid an amount equivalent to the difference of the value of the land before the development rights are removed and the value of the land after the development rights are removed. (Sanford, pers. comm.)

#### Program Administration

While most TDC and PDR programs are administered by a municipality; this program is administered by a private land trust.

### *WHEATLAND COUNTY, ALBERTA*

Wheatland County, Alberta lies to the east of Municipal District of Rocky View which surrounds the City of Calgary on the east, north and west sides. Wheatland County is seeing rapid land use change - subdivision applications in 2007 increased 135% compared to 2006 (“Subdivision Activity Record”, 2008). In 2006 the county created the Subdivision Credit Application Transfer (SCAT) program. The overall density in an area subject to the program remains neutral as the baseline density is not increased by any bonusing exercise; it is simply moved from one place to another or “clustered” on the receiving area.

#### Program Goals

This program was designed to maintain relatively large blocks of contiguous agricultural land without removing the economic benefit a landowner may receive by developing a parcel. While there may not be a direct financial advantage, a subdivision application that clusters buildings on a small area is more likely to be approved by County Council.

#### Sending Area Designation

Any land within the agricultural zone of the County can be a sending area. Sending areas can be as large as 7 quarter sections (453 hectares) or as small as one quarter section (65 hectares). Sending areas are applied for through the regular subdivision process. Without the program, one parcel can be subdivided out of each quarter section. With the program a landowner (or landowners) can move each of those single parcels on to one “receiving” quarter.

#### Receiving Area Designation

The receiving area must be adjacent to the sending area and not separated from the sending area by any type of road or road allowance. The sending and receiving areas may or may not be owned by the same landowner.

### Transfer System

It is likely that transfer will occur on land owned by the same person due to the requirement that the parcels are adjacent to one another. However in cases where there are two or more landowners involved, the value of each transferred building lot is negotiated privately between the sending area and receiving area landowners.

The County office maintains a log book that records where "Subdivision Credits" have been removed. There is no deed-restricting agreement registered on the land title of the sending parcels.

### Program Administration

Subdivision applications are processed through Palliser Regional Municipal Services - a non profit corporation that was formed by the member municipalities in 1995 when the Regional Planning Commissions were disbanded. SCAT applications follow the same process as a regular subdivision application. Records of land parcels involved in SCAT subdivisions are maintained by the Planning department at the County offices.

## *MUNICIPAL DISTRICT OF BIGHORN, ALBERTA*

In 2007 the Municipal District of Bighorn in Alberta, which lies to the west of the Municipal District of Rocky View, amended their Municipal Development Plan (MDP) and Land Use Bylaw (LUB) to include a Transfer of Subdivision Density (TSD) policy. The TSD policy is applicable to an area referred to as the Small Holdings policy area in the MDP (Municipal District of Bighorn No. 8 Bylaw 06-07). The smallest subdivision in the Small Holdings area is 40 acres. Using the TSD policy, a landowner reduces or eliminates the subdivision potential on one parcel, while increasing by the same amount subdivision potential on one or more other parcels. For example if a landowner had 160 acres they could, using the TSD, move the four allowed lots on to one 40 acre parcel and place the remaining 120 acres parcel under a conservation easement.

### Program Goals

The goal of this program is to increase the density on smaller parcels while maintaining the balance of open space.

### Sending and Receiving Area Designation

Sending and Receiving areas are not predetermined. The only requirement for a sending area is that it meets the conservation objectives of the land trust that will hold the eventual conservation easement.

If a landowner in the Small Holdings policy area wanted to use the program they would submit the appropriate development applications that would describe the sending and receiving areas. As the program matures it is expected that a public consultation process will be used to determine areas the community values for conservation and for development.

There is no increase in overall density in the area as development potential is only being moved from one place to another.

### Transfer System

The value of each transferred building lot is negotiated privately between the sending area and receiving area landowners. The Municipal District of Bighorn's LUB requires a conservation easement be placed on a sending area when Subdivision Density has been removed. The municipal district is not going to hold the conservation easements so landowners will have to negotiate with a land trust in order to participate in this program.

### Program Administration

The Municipal District of Bighorn Planning Department processes TSD applications and oversees the required approvals and permits. The monitoring and stewardship of the sending sites are the responsibility of the landowner and the land trust that holds the conservation easement.

## POTENTIAL APPLICATIONS TO AGRI-ENVIRONMENTAL POLICY

The Transfer of Development Credits (TDC) tool lends itself well to supporting agri-environmental policy in the Canadian context because in the presence of development pressure it has the ability to explicitly recognize, value and compensate agricultural and environmental values simultaneously. Many tools focus on protecting the agricultural values of landscapes, and others focus on protecting the ecological or environmental values. However, TDC programs have the ability to define an *integrated* list of community values to be maintained via the program. American programs can – and regularly do – designate a list of 'sending' area criteria which include both agricultural values (soil types, agricultural communities, land use practices, etc.) and ecological values (riparian areas, wildlife habitat, vegetation communities, etc.).

When looking specifically at the potential policy facets of catalyzing or supporting TDC applications, there are a number of ways to present that information. The authors have chosen to analyze the policy dimensions from the perspective of a federal agency like Agriculture and Agri-food Canada or its sister agencies having made the decision to promote the development of the TDC tool. In that case, the critical needs are a better understanding of some of the strategic policy considerations, what roles are likely to be played by colleagues in other levels of government, and what role could be played by federal agencies.

## Policy Considerations

### *PRESSURE FOR AGRICULTURAL LAND CONVERSION IN CANADA*

(drawn from Hoffman et al 2005).

The primary threat to agricultural landscapes which the Transfer of Development Credits tool can assist in addressing is the urbanization of the Canadian landscape, specifically the agricultural landscape. Urbanization – including residential development and its associated light industrial and commercial counterparts – is an extremely difficult threat to address because it is: 1) a very dispersed and contagious change pattern, and 2) non-regulated and difficult to mitigate legislatively. For these reasons, Transfer of Development Credits programs can be well-suited to addressing this threat.

Hoffman et al (2005) describe the urbanization trend in Canada very clearly and statistically, in their report looking at the changing rural Canadian landscape from 1971 to 2001. Canada is an urbanizing country. In 1971, approximately 16,000 square km were urbanized. From 1971 to 2001, we saw a 96% increase, adding another 15,200 square km, with every province seeing a dramatic increase (see Figure 3).

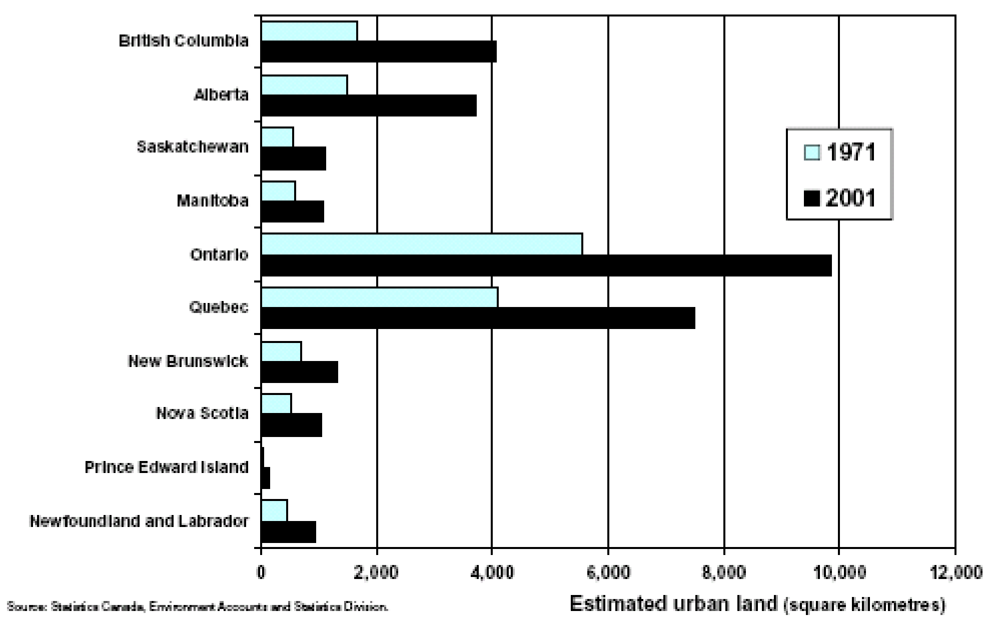
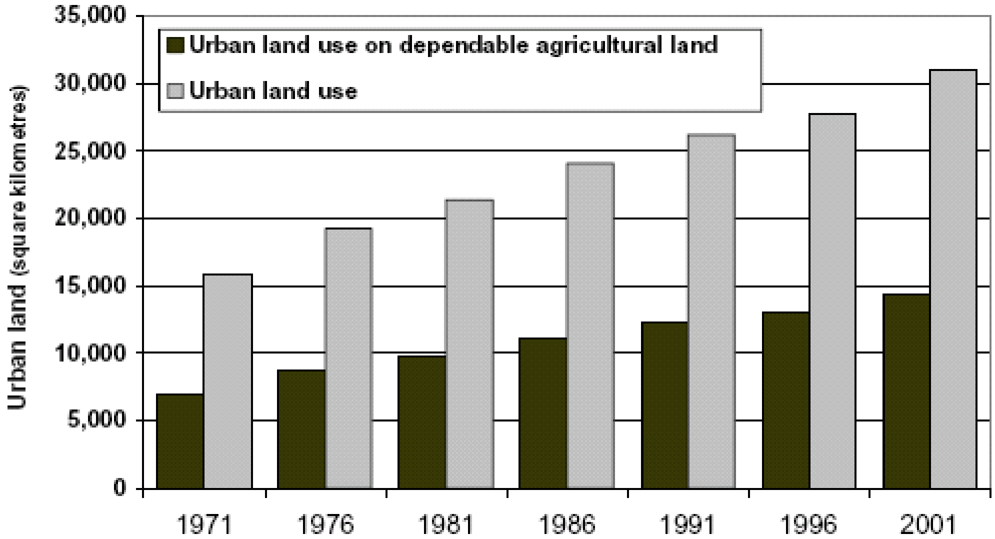



**Figure 3:** Estimated urban land (square kilometres) by province (Hoffman et al 2005)

The challenge for agriculture in Canada is the impact that the urbanization trend is having on agricultural land. The Canada Land Inventory, a comprehensive multi-disciplinary land inventory of rural Canada, defines “dependable agricultural land” as Classes 1, 2, and 3. In 1971, urbanized land in Canada sat on approximately 6,900 square km of dependable agricultural land. By 2001, that number was

14,300 square km, accounting for almost half of the urbanized landscape (see Figure 4).




Source: Statistics Canada, Environment Accounts and Statistics Division.

**Figure 4:** Urban land use on dependable agricultural land (square kilometres) (Hoffman et al 2005)

A great deal of the infrastructure associated with urbanization, but not strictly urbanized land (roads, railways, transmission lines), eats up a significant portion of the dependable agricultural land, and is likewise increasing (see Table 1).

| Year | Urban and rural built-up[1] | Transportation and utilities[2] | Protected areas and campgrounds | Other[3] | Total |
|---|---|---|---|---|---|
| | square kilometres | | | | |
| 1951 | 11,400 | 7,400 | 1,000 | 200 | 20,000 |
| 1961 | 12,600 | 7,400 | 1,100 | 300 | 21,400 |
| 1971 | 14,300 | 8,200 | 1,300 | 500 | 24,300 |
| 1981 | 18,000 | 9,800 | 1,500 | 1,100 | 30,400 |
| 1991 | 21,100 | 10,600 | 2,100 | 1,700 | 35,500 |
| 2001 | 23,200 | 11,700 | 3,400 | 2,100 | 40,400 |

Notes:
Figures are rounded to the nearest 100.
1. Includes inventoried human settlements with populations above 1000, settlements with a population under 1000, and rural farmsteads/housing lots.
2. Includes roads, railways, airports and utility transmission lines.
3. Includes lumberyards, sewage treatment facilities, dumps, Federal Real Property, cemetaries, pits, quarries, autowreckers and golf courses.
Source: Statistics Canada, Environment Accounts and Statistics Division.

**Table 1:** Estimated area of non-agricultural uses of dependable agricultural land, Canada, 1951 to 2001 (Hoffman et al 2005)

To put this conversion in perspective, it is important to remember that only about 5% of Canada's land base is dependable agricultural land (i.e. considered free from severe constraints for crop production). At the same time, the demand for cultivated land has been increasing consistently, and now actually outstrips the available dependable agricultural land (see Figure 5).

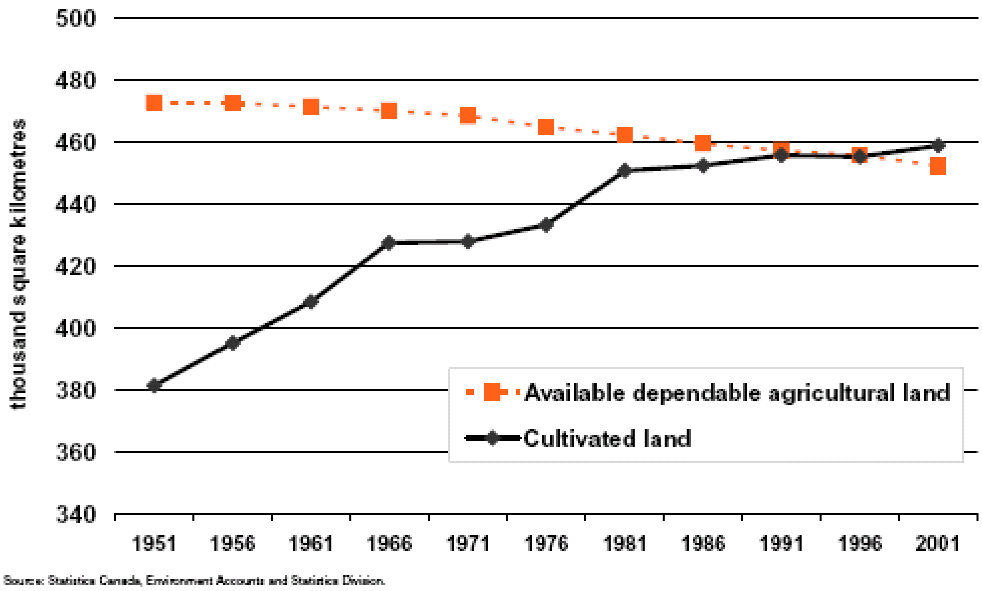



**Figure 5:** Supply and demand: Available dependable agricultural land and cultivated land (Hoffman et al 2005)

The result is that marginal agricultural land is pressed into production. In terms of ecological goods and services (EG&S), these marginal agricultural lands are often very important, and may be wetlands, native vegetation, critical wildlife habitat, riparian areas, etc.

To summarize, Canada has a small effective agricultural land base that is rapidly being consumed by urbanizing land uses, at a time when demand for cultivated land continues to increase. As well, the marginal land recruited into production may have had critical importance for ecological goods and services. The convergence of a significant development pressure (urbanization) and a threat to a valued landscape (conversion of agricultural land) is exactly the sort of circumstance in which the Transfer of Development Credits tool functions best, as the tool requires there to be pressure for increased development.

## *Addressing Non-urbanization Threats Using TDCs*

TDC programs require a relatively high level of pressure for land conversion that is lucrative to create the market conditions necessary for program initiation and function. If they are relatively few opportunities for developers to utilize credits, there will be equally few opportunities for parcels of land to be conserved.

As described in detail above, urbanization is one of the foremost threats to agricultural land, and the threat which Transfer of Development Credits programs are expressly able to address. However there are a number of other land use threats to valued agricultural landscapes and the ecological goods and services they provide, which are non-urban in nature. These may include agricultural finishing and processing operations (confined feeding operations), large-scale recreational developments such as ski hills and golf courses, industrial operations such as power plants and hydrocarbon processing plants, etc. While there are opportunities here, care must be taken to assess the credit-generation opportunities. For example, large but individual industrial plants will provide only a limited number of credits, and only at one time, and will be hard-pressed to drive a comprehensive TDC program.

### *SETTING PROGRAM GOALS IN SUPPORT OF ECOLOGICAL GOODS AND SERVICES (EG&S)*

TDC programs can be set up with goals in support of ecological goods and services (EG&S) objectives, such as natural capital and flows of ecological services. However, care must be taken when dealing with goal sets that have both compatibilities and incompatibilities, such as agricultural conservation and ecological conservation.

The impact a TDC program has in conserving land is entirely dependent on the program goals, specifically how they are articulated and operationalized, and whether multiple goals are vetted for incompatibilities. Conservation goals are articulated overall for the program, but effected on the ground largely through determining the sending areas, credit transfer system, and level of restriction contained in the deed-restricting device (e.g. conservation easement). As well, there are opportunities to use controls on the receiving area approval criteria.

#### Setting Agricultural Goals

Programs wishing to conserve agriculture in their area need to be explicit in their goal setting about what specifically they hope to accomplish. Programs may variously hope to conserve a critical mass of *any* type of agricultural land, certain types of agriculture activities (rangeland, Class 1 soils, etc.), certain agricultural communities (based on community profiling), or other overarching goals.

Determination of sending (conservation) areas will follow from that. Sending areas are generally determined by one of two broad approaches: geographic or criteria-based. In a geographic approach, program designers would map out in a pre-determined way which areas of the community best supported the goals. For example, the community may map out the high-quality soils, the large blocks of contiguous cropland, public agricultural land vs. private, or other parameters which indicate the agricultural land base which best supports the program goals.

For criteria-based programs, the program designers may simply indicate a region within which the community wishes to see agriculture persist and thrive. It may then be up to the landowners within that region to apply or otherwise indicate that their parcel meets certain criteria (certain soil types, certain agricultural activities, certain parcel sizes, etc.).

In both instances, the sending areas may also be delineated to a degree by a threat assessment. For example, conservation activity may be directed to valued landscapes with high risk of conversion due to rapid urbanization (residential, rural residential, commercial, roads and infrastructure), industrial development, and/or recreation activity, both intensive (golf courses, ski hills, hotel resorts) and dispersed (off-highway vehicle use, mountain biking, walking trails).

The details of the conservation mechanism used to restrict development also follow from the goals. Tools such as conservation easements allow landowners to continue using their land in all ways except those explicitly restricted, so those restrictions directly reflect the goals. For example, a program which only wants to see a certain volume of agricultural land persist, and where the main threat is rural residential development, a conservation mechanism may simply need to restrict sub-division below a given threshold. Preventing lot sizes smaller than 100 or 160 acres may suffice to accomplish the goals. Conversely, a program that is looking to maintain a certain type of agriculture may need further restrictions. For example, a program seeking to maintain extensive cattle grazing may also restrict against cultivation.

### Setting Environmental Goals

Similar to agricultural programs, TDC programs designed to conserve environmental or ecological values must be explicit about their goals. Programs may variously seek to conserve environmentally sensitive areas (based on inventories of resources such as wildlife habitat, riparian areas, wetlands, etc.), certain ecological functions (water cycle recharge, capture and storage; carbon sequestration; wildlife connectivity; etc.), scenic viewscapes, or other overarching goals.

Determination of sending (conservation) areas would follow from the goals, with those areas being delineated or criteria systems being developed which best support the goals. Some communities have pre-existing environmentally sensitive area mapping which could form the basis for sending areas. Others may need to develop them in conjunction with the appropriate biologists, hydrologists, ecologists, etc. Criteria-based programs may set out that sending area parcels must have certain ecological features based on these goals, such as sensitive species, critical habitat, riparian areas, wetlands, native vegetation types, species movement corridors, or others. Similarly to the agricultural example above, some of the sending area determination may be based on a threat assessment, identifying those valued landscapes most at risk, and focusing sending areas there.

Most provinces have conservation easement legislation, which would likely provide the restrictive mechanism needed in the case of ecologically valuable land. Again, restrictions would be based on the overarching program goals. If the attributes which makes the landscape valuable, and which underlie the program goals, are related to native vegetation (e.g., sensitive species habitat, carbon sequestration), then there may be restrictions related to removing the native vegetation (development of gravel pits, cultivation, buildings).

### Receiving Area Restrictions

One additional method for effecting TDC program conservation goals on the ground is to restrict receiving areas. This is most likely to happen in areas where receiving areas are not pre-determined, but rather applied for by the developer. For example, in Boulder County, Colorado, a receiving area developer must still demonstrate that the site is not located on prime farmland, designated open space, environmentally-sensitive lands or critical wildlife habitat (Pruetz, 2003).

### Coordinating Agricultural and Environmental Program Goals

Several American programs have been set up explicitly with both agricultural and environmental goals (Pruetz, 2003), representing both efficiencies and synergies. However, there are also potential incompatibilities which program designers must be aware of and address right at the goal-setting stage. As well, the more goal sets there are (agricultural, ecological, historical, recreational, etc.), the more difficult this becomes, suggesting that "do-it-all" programs may ultimately be less effective.

Incompatibilities between agricultural and environmental goals often arise when a TDC program is designed in two places; one team purposing and scouting agricultural elements, and another purposing and scouting the environmental elements. Programs which seek to conserve all types of agriculture while at the same time trying to conserve native and naturalized landscapes may, for example, find sending areas at once protecting land *from* cultivation and *for* cultivation. Goals, in these cases need to be rationalized, and generally are in one of two ways.

First, a program may seek to separate them. Boulder County determined a clear idea of what types of valued landscapes they wished to protect, then designated four different categories of sending areas: Rural Preservation Area, Accelerated Open Space Acquisition Area, Northern Tier Lands, and Private Land Enclaves lying between the Boulder Mountain Parks and the Arapaho-Roosevelt National Forest west of the city of Boulder (Pruetz, 2003). Each of these has its own goals with (e.g.) the Rural Preservation Area focused on maintaining rural land use character, and the Accelerated Open Space Acquisition Area focused on maintaining ecologically important areas.

Second, a TDC program may seek to explicitly integrate the potentially competing goals. There are several goals that could easily be compatible with both agricultural and environmental conservation, but care and attention is required to make them so. For example, a program could seek to conserve only agricultural land which demonstrates environmental qualities at certain levels, such as:

- Soil cover
- Soil quality
- Soil salinity

- Water quality (Nitrogen, Phosphorus, pesticides, pathogens)
- Wildlife habitat on farmland
- Invasive alien species
- Soil biodiversity
- Etc.

Landowners applying to have their parcel considered as a sending area, might be required to indicate the value of their land against at least some of these criteria. Those threshold levels would have to be set such that they were supportive of the type of agricultural activities the program is hoping to conserve.

This effort requires some hard decisions, and again requires communities to look at their ultimate goals. For example, if prime agricultural land exists in a water supply region, the community must look at what takes precedence, and make trade-offs related to levels of threat to each, ability to reduce agricultural activity in support of watershed protection, increasing other areas where agriculture will take precedence, etc.

In coordinating conservation efforts on different types of valued lands, it is again important to look to the overarching program goals. When heavy restrictions in support of one valued landscape type decrease support for conservation of another, program designers must go back to the motivations behind the program. For example, it is unlikely to achieve a complete set of comprehensive agricultural conservation goals *and* environmental conservation goals. However, one set of restrictions (e.g., restricting subdivision) might meet 80% of the community's agricultural conservation goals and 80% of their environmental goals, in which case they must review if that is acceptable.

### Bonusing Up for Extra Benefits

A great deal of the conservation power in TDC programs comes from the ability to "bonus up" above the base program requirements. This technique allows programs to get broader buy-in, while still providing opportunities for additional conservation activity and additional compensation.

In the case of sending areas, several programs provide landowners with a base number of credits, but then provide additional credits for the existence of additional landscape features which the community has determined are desirable. For example, Larimer County, Colorado provides sending area landowners 1 credit per 2 acres. However, they are allotted bonus credits based on:

- Presence of regional recreation trails or wildlife corridors;
- Preservation for agriculture;
- Provision of recreation and education opportunities;
- Scenic or historical values; vistas of community importance; or
- Existing uses and historical development approvals.

Similarly, receiving (development) area landowners/developers can receive bonuses, in a somewhat reverse fashion. For example, a developer may receive a bonus density increase for buying credits, but then also be eligible to reduce his/her credit requirements by providing affordable housing units, including engineered wetlands, etc.

### CONSERVING LAND VS. PRESCRIBING MANAGEMENT PRACTICES

There are several tools well-suited to encouraging sustainable land management practices, but Transfer of Development Credits is not one of them. TDCs are targeted at protecting valued landscapes from imminent conversion to less desirable land uses. Administrative problems and decreased program participation may result from trying to apply TDCs as more than a land conservation tool.

Program designers may be tempted to include management prescriptions inside conservation easements (or other deed-restricting devices), but there are at least two dilemmas that arise here. First, conservation easement-type tools are generally intended to be perpetual, while management practices should and do evolve constantly. Second, practical experience with conservation easements is indicating that prescribing management practices within the restrictions is difficult to compensate for, difficult to enforce, and may unnecessarily reduce involvement in conservation easement programs (Good and Michalsky 2008).

Tools and programs such as environmental farm plans, term management agreements, capital cost support, extension, etc. are much better tools for encouraging specific management practices, and are excellent complements to TDC programs.

### SENSITIVITY TO NATIONAL GEOGRAPHY AND CULTURE

A Transfer of Development Credits (TDC) programs is not a one-size-fits-all tool, and as noted previously in this paper, there are circumstances better and worse suited to its application.

There are at least three important considerations when looking at how TDC programs could be promoted or catalyzed nationally: variations in urbanization pressure, variations in cultural acceptance / need of TDC-type programs, and variations in need for zoning changes.

#### Variations in Urbanization Pressure

Though a significant driver of agricultural land conversion – and of Transfer of Development Credits program viability – urbanization is not uniform across the country. Four regions face extreme threats from urbanization: the Montreal region in Quebec, the extended Golden Horseshoe in Ontario, the Edmonton-Calgary corridor in Alberta, and the lower mainland / south Vancouver Island region in British Columbia. In reviewing policy options nationally, and considering where TDC programs can most effectively help address the urbanization dilemma in Canada, this variation should be weighed appropriately.

### Variations in Cultural Acceptance / Need of TDC-type Programs

Similar to the threat of urbanization, the country varies dramatically on a number of cultural fronts. Of particular importance for considering agri-environmental policy applications of TDCs, is how the tool would be perceived and applied given the cultural inclinations of the region.

Areas with rural predominance, both in terms of land base and political weight, are more likely to see the benefits of conserving agricultural land, and therefore tools to do so. Areas with more acceptance of regulatory approaches may not need TDCs at all, and may be able to accomplish agricultural land conservation goals simply through regulation. Conversely, areas with strong property rights movements and perceived self-image of self-reliance are more likely to accept TDC programs as a desirable limited-government, free-market option.

### Variations in Need for Zoning Changes

The agricultural landscape, and the surrounding urbanization patterns, vary dramatically across the country, which has a direct impact on the treatment of zoning relative to a TDC program.

In some parts of the country, especially those with highly productive soils, there tends to be more intensive, higher-value agriculture on smaller parcels. These areas also tend to be surrounded by more intensive urban development. In areas with more extensive agriculture, there tends to be larger parcels and less high-intensity urban development. In the case of highly-developed landscapes, TDC programs may need to start with a significant down-zoning to immediately stem the conversion of what may be a very limited agricultural land base.

Conversely, areas with more extensive agriculture may already have restrictive zoning (e.g., one parcel allowed to be sub-divided out of a 160 acre quarter section). In these cases, initial zoning may be adequate, but at risk, and TDC programs are intended more to ‘protect’ the zoning.

## Municipal and Provincial Government Roles

Most important when considering the application of the TDC tool, is to remember that it is implemented for the most part by local government authorities. Provincial governments, from whom municipalities derive their power, have perhaps the greatest direct policy impact.

While the federal government agencies may have less direct impact, they can have critical roles to play in catalyzing, promoting, and supporting TDC programs. To be most effective in that role, it is important to understand the role and potential activities of other levels of government.

### MUNICIPAL / LOCAL GOVERNMENTS

As is described throughout this paper TDC programs are a municipal land use planning tool. Municipalities are granted their powers from provincial governments and as such have the legal responsibility to make sound land use decisions. While TDC programs are sometimes delivered across jurisdictional boundaries they are created and designed to achieve local to regional land use planning goals.

If a municipality chooses to use a TDC program as a tool to achieve its agri-environmental goals, the tool and its application need to be described in municipal plans and local level land use bylaws and policies.

### PROVINCIAL GOVERNMENTS

As the level of government from which municipalities derive their power, there is an important role for provincial/territorial governments to play in supporting the development of the Transfer of Development Credits tool[7]. That role can be broadly divided into legislative direction and program support. As well, there is tremendous opportunity for technical and financial support, parallel to that described below under the federal government role.

In exploring their role, perhaps the most important policy consideration for a provincial level government is clarity around how TDC programs can help achieve provincial-level goals. As stressed earlier by the authors, if the provincial goals are, for example, to protect the agricultural *industry*, but the *local* goals are to protect the agricultural *land base* and its socially-beneficial environmental functions, there will be incompatibilities that need to be addressed early on (see *Setting Goals in Support of Ecological Goods and Services*, above)

#### Legislative direction

##### ENABLING LEGISLATION

While not strictly necessary (see *Legal Considerations*, above), provincial legislation enabling Transfer of Development Credits (TDC) programs could significantly assist and guide the development and implementation of the TDC tool in each province. In particular, it would be a vital signal to municipalities considering the tool that the concept has support at the provincial level. As noted above, conversations with Alberta municipalities indicate a nervousness about moving forward with implementing TDC programs in the absence of such provincial-level policy indicators.

[7] For a more detailed discussion of the potential role of provincial governments, see Greenaway and Good (2008).

In the United States, it is clear that state-level legislation is not required as there are 33 states with Transfer of Development Rights programs, but only 23 states that have enabling legislation (Pruetz and Pruetz, 2007). Where it does exist, enabling state-level legislation appears to vary in how prescriptive the tone and details are; perhaps, based on whether local governments have the jurisdiction to define their own programs or not. Some Acts do little more than enable the creation of TDR programs at the County level, while others detail many of the operational aspects of permissible programs. Components that may be included in state legislation include:

- Criteria for establishing permissible plans (requirement for the development of a Master Transfer Plan, capital improvement requirements for receiving areas, utility servicing plans for receiving areas, and real estate market assessments);
- Guidelines for establishing multi-jurisdictional programs;
- Designation of directing bodies (municipal planning board, agricultural services board, etc.), and decision-making / dispute resolution processes;
- Identification of state-level assistance programs (plan development, potential financial support, etc.);
- Specifications for appropriate sending landscapes / receiving zones; and
- Protocols for the establishment and operation of TDC banks.

#### TDC-specific Easements

One of the most significant barriers to TDC implementation is the limited tools for permanently removing development potential in the sending areas once the credits have been transferred. TDC programs are likely to focus on ecologically, agriculturally, or historically valued landscapes and properties. However, most provincial conservation easement legislation currently addresses only the *ecological* landscapes.

Enabling TDC legislation could make explicit reference to tools that exist in other legislation, and where necessary create TDC-specific easements directly within the TDC legislation.

### Program Support

A strong potential role for provincial governments in providing policy support for Transfer of Development Credits programs is through program or implementation support. In the United States, several states have expanded their role beyond regulator, using strategic support of TDR and other growth management initiatives to further state-level goals. Three possible examples of program support are given below.

#### Provincially-held Conservation Easements

Often the long-term nature and stewardship requirements of conservation easements are either intimidating to municipalities or they simply do not have the resources to manage them. In these cases, provinces can step forward and hold the easements on behalf of the municipality.

Several provinces already hold conservation easements themselves, either directly (e.g. Saskatchewan Agriculture and Food and Saskatchewan Environment), or through arms-length bodies (e.g. Manitoba Habitat Heritage Corporation), so the concept is not a new one.

### TDC Program Credit 'Banks'

Although credit banks are not *required* for a program to be successful, there is great value in them in terms of their ability to smooth the operation of a TDC program. In some US cases, these banks have gone on to be de facto administrative organizations for the TDC programs, monitoring the effectiveness of the program, securing and distributing grant monies, and setting average credit prices. Enabling provincial legislation or policy structures could facilitate the development of such a bank or banks.

### Provincial-level Dispute Resolution Process

There will undoubtedly be conflicts between participants in TDC programs. Individual municipalities will be poorly placed to resolve these disputes in that they will very often be one of the parties in the dispute. A provincial-level dispute mechanism, ideally with some sort of standing body, would be well placed to resolve local and interjurisdictional disputes. Over time, such a body would also be able to develop some expertise in the tool at a general level, increasing the efficiency and quality of decisions.

## Potential Federal Government Role

In considering the use of the TDC tool to support agri-environmental policy in Canada, there is a significant role for Agriculture and Agri-Food Canada to play in promoting and supporting this tool, especially when approached collaboratively with their provincial partners and sister agencies.

While the purpose of Canada's Agricultural Policy Framework and the up-coming Growing Forward are to broadly support the agricultural industry, agricultural operators, markets, business opportunities, etc., the TDC tool protects the supporting land base. The critical nature of that is straightforward – if you have no agricultural land base, you have no agriculture or the associated ecological goods and services.

Similar to the provincial governments' considerations, federal agencies seeking to play a role in promoting TDC program establishment must have clarity first around their own goals, then how they might align with those of local community programs. Agriculture and Agri-Food Canada could look to tools such as Agri-

Environmental Indicators and Agricultural Community Profiling to determine areas of common interest.

Where the Federal Government's agri-environmental goals are consistent with provincial, regional or municipal land use planning goals, partnership opportunities may be obvious. In situations where a region or municipality is working to clarify their goals, the federal government through Agriculture and Agri-Food Canada may be able to provide information, partnership opportunities or technical support to help them.

The involvement of the Federal Government in the increased application of TDCs in Canada for the protection of agri-environmentally valued landscapes or landscape features could happen through any of the following:

- Education / Promotion;
- National Collaboration; and
- Program and Financial Support.

### *Potential Policy Focus*

#### Education / Promotion

A key role for the federal government, through Agriculture and Agri-Food Canada, would be to develop policies that raise awareness of the TDC tool in support of the agri-environmental / EG&S goals as described in the Agricultural Policy Framework and Growing Forward. In a similar fashion, the Canada Mortgage and Housing Corporation (CMHC), though not in a position to directly implement a TDC program, promotes the TDC concept on their web site as a way to implement the CMHC goal of ensuring available affordable housing.

Similar to the Technical Assistance component of Greencover Canada, Agriculture and Agri-Food Canada, in conjunction with provincial and other partners, could develop internal or external expertise to provide information and extension tools that local communities will require.

Some of the important topic areas might include:

*Incentives* – Many TDC programs use innovative incentive techniques to encourage the engagement of program participants (e.g., trimmed down review process for developments subject to a TDC program). A compilation of incentives used by other programs would be useful.

*Stakeholder advisory groups* – Though the make-up of individual stakeholder advisory groups would vary between programs, the principles and basic techniques would be similar. A resource that describes effective TDC program advisory groups could be available.

*Measuring 'value' in landscapes* – TDC programs are designed to help citizens conserve the *'valued* landscapes in their communities. Getting a sense of the relative 'value' of different landscapes (especially from an ecological and agricultural perspective) can be very difficult. Gathering techniques and developing starting-point methodologies could be vital resources.

*Sending/receiving area determination* – At the centre of any TDC program is the need to identify the areas most appropriate for development, and relate those to the areas most appropriate for conservation. The 181 programs in the United States have used a variety of approaches; a review and suggested approaches would be a valuable resource for communities seeking to develop local programs.

*TDC credit bank*- TDC programs seeking to develop TDC 'banks' will face challenges that may already have been addressed by American programs. A review of TDC banks in the American programs where they are used would provide valuable information.

TDC programs rarely function in isolation, as conservation efforts are complex and multi-faceted, so therefore supported by many complementary programs. Agriculture and Agri-Food Canada could create an "Agri-Environmental Conservation Toolkit for Canadian Municipalities". As well as the information described above for TDCs, the informational toolkit would need to describe the purpose and roles of such tools as tradable development permits, conservation offsets, purchase of development rights, wetland mitigation banks, land trusts, etc.

### National Collaboration

As an agency with a national perspective, Agriculture and Agri-Food Canada is in a unique position to promote dialogue and potential collaboration between different TDC interests in Canada.

*Discussion forums and information sharing* – A forum to, as a minimum, disseminate the status of TDC efforts in different jurisdictions could bring stakeholders together to discuss the application of TDCs to national and regional agri-environmental efforts and initiatives. Communities with similar goals or visions could be linked for shared learning experiences.

*Legal review* - Agriculture and Agri-Food Canada working with their provincial partners could initiate a review of each province's municipal and planning legislation using Kwasniak's (2004) TDC legal review methodology. Based on the results of each review the provinces, supported by AAFC, could work on the development of TDC enabling legislation in regions where there is interest.

*Land trust capacity* - Agriculture and Agri-Food Canada working with Environment Canada and the Eco-Gifts program could play a vital role working with potential local land trusts to identify organizations willing and able to hold TDC easements. Many municipalities seeking to create TDC programs will look to partner with existing land trusts to hold the easements arising from successful program transactions. Where there are no appropriate land trusts, a national policy that supports the formation of agricultural-focused land trusts would be useful. While Canada's land trust community has grown significantly in the past 10 -15 years, it is still relatively small. As well there is a risk that municipalities' conservation goals may not coincide with a land trust working in the area.

*Agricultural conservation easements* – Ontario is the only jurisdiction to explicitly allow conservation easements focused on protecting agricultural land. Again working with the Eco-Gifts program, Agriculture and Agri-Food Canada could work with land trusts, provincial governments and the agricultural community to promote the development of such conservation easements across Canada.

### Program and Financial Support

Federal agencies can look to support TDC programs through existing or planned partnerships with provincial agencies, making use of technical transfer mechanisms and cooperative funding delivery mechanisms.

*Real estate market assessment* – Communities seeking to implement a TDC program will likely need to perform some type of real estate market assessment as a basis for determining how a TDC market would interface with the local real estate market. Such municipalities would benefit from a standardized and locally-applicable methodology for such assessments.

*TDC credit valuation* – Similar to the above, every municipality would be seeking a way to determine the value of TDC 'credits' in their area. Standard or 'average' prices will be of almost no use for creating the details of local programs. However, information about the methods used, examples from other jurisdictions, etc., would be valuable resources.

Funding support for communities implementing TDC programs may be critical to their development, especially in a program's start-up phase. Funding programs can be used to directly support TDC efforts, but also for incenting voluntary activity in support of program goals. For that reason, funding support may come through new granting initiatives, or simply targeted utilization of existing ones.

*Areas of importance planning support* – Plans that identify agricultural, environmental and/or historical areas of significance are critical background studies. Recognizing the important role that such plans could play in the development of local TDC programs, grants should encourage the development/update of natural resource profiles (e.g. Agricultural Community Profiling).

*Start-up funding* –TDC start-up grants to municipalities would be vital in covering feasibility assessments, initial consultation, exploration of sending/receiving area designations, and other up-front needs.

*Plan development funding* – Once a municipality (or group of municipalities) has moved beyond the initial stages and reached the point of implementation, they will (similar to the start-up phase) require some support outside of the normal planning processes.

*Education and awareness funding* – A great deal of the time establishing a TDC program is spent engaging the local citizenry. Because this understanding and buy-in is so critical, grants should be made available to municipalities specifically for communicating with the local community about the goals and features of a local TDC program.

## INSIGHTS AND CONCLUSIONS

The Transfer of Development Credits (TDC) tool has a long history in North America, and a potentially bright future in Canada if it is applied conscientiously, and expectations are within reasonable bounds. The tool has been in use in the United States for several decades, and in limited consideration in Canada for almost as long. However, in terms of comprehensive programs aimed at conserving agricultural lands, this is a new tool in Canada.

Regardless of the players involved in establishing, operating and/or promoting the Transfer of Development Credits tool, the authors offer the following insights gleaned from the various reviews of the tool. They are divided into ‘challenges’, and ‘factors of success.’

### Challenges

A number of challenges face both those seeking to create a new TDC program, as well as those managing a well-established program. It is important to note that the “successful” American programs reviewed in person by the authors changed constantly, sometimes dramatically, over the course of their existence, illustrating that the effort of addressing these challenges is on-going.

As well, these challenges are multi-dimensional, and have both operational/implementation facets, as well as policy/legislative facets. They should be considered along that full spectrum.

#### *GETTING COMMUNITY BUY-IN*

Successful TDC programs need participation. This requires “buy in” from agricultural landowners, developers and the community at large. Build out scenarios, visioning exercises, threat assessments etc. are activities targeted at gaining community support or “buy in”. These exercises can be very challenging as there will inevitably be detractors.

Community values can be established through visioning exercises. It is important to understand the values expressed. For instance, if “agriculture” or an “agricultural community” is expressed as a value worth protecting, the difference between agricultural *land* and agricultural *industry* should be established.

Another factor with any new tool is the inevitable misinformation that circulates surrounding it; particularly if it is described as a “silver bullet” to solve land use problems. The impact of misinformation can negatively affect early internal discussions, the public consultation process, as well as the ongoing use of the program. It is important for TDC programs to be transparent and accountable to well planned and realistic goals, and for all changes to programs to be widely communicated.

### Determining program scope

There are several key considerations when considering the scope of a program, including program goals, geographic extent, and the ultimate impact. Each of these has unique challenges.

As noted before, many TDC programs are established with multiple goals in mind, including agricultural land protection, ecological conservation, historical preservation, maintaining recreation opportunities – some even protect sub-surface mineral resources and military base buffer zones. The challenge for a community is to target the conservation types they want to see, based on the pressures and values in the community, and to avoid creating a 'catch-all' program. It is easy to add multiple goals in the documents, but more difficult to ensure the resources and on-going support are there.

In terms of geographic scope, there is a wide range. Some programs are developed for a County, some for a sub-region within a County, and some for multiple Counties (e.g. the New Jersey Pinelands program covers over 1 million acres and involves over 60 jurisdictions). Again, the challenge is choosing a realistic area, and one that supports the program goals.

In terms of the ultimate impact, a program must be clear what it ultimately wants to achieve. One program (in Larimer County, Colorado), recognized a long-standing desire to ensure two cities did not grow together, decreasing the need to specify detailed land uses, so long as the 'open space' was maintained. Others are more specific about the types of land use and (e.g.) agricultural character to be maintained. The challenge is ensuring that the program supports the ultimate vision; agricultural land preservation goals, or example, may or may not result in a viable agricultural economy.

### Appropriate tools and capacity for protection

A key feature of TDC programs is the mechanism to extinguish development potential after credits have been sold. The challenge in many jurisdictions will be what conservation tool to apply. Currently conservation easements are available in most provinces for use on biologically diverse sending areas. Most jurisdictions have some (often untested) ability to protect heritage resources. Ultimately, restrictive covenants could be used for a variety of circumstances.

The challenge with these mechanisms is the lack of consistent application depending on the "landscape value" being protected. Before local governments seek to use the TDC tool, they must ensure that there is an available perpetual conservation mechanism that matches the landscape type to be protected.

Another challenge in the case of conservation easement-type tools is who will hold these easements. In most cases, they can be held by a local government, the province, or a third party eligible NGO (a land trust). Regardless of what body holds the conservation easements, they must recognize and be prepared for the associated liability of monitoring and enforcement over time. In most jurisdictions across Canada, there is not sufficient capacity within the land trust community to comprehensively support extensive, multi-goal TDC programs.

### *Legal clarity*

Kwasniak's (2004) national review of the legalities surrounding Transfer of Development Credits programs ascertained that municipalities likely have the legal ability to implement TDC programs (see *Legal Considerations*, below). Nonetheless, there are no provinces with legislation that explicitly enables TDC programs, and early adopters will undoubtedly be faced with some level of uncertainty and nervousness, and must work with their legal counsel to address this.

For example, although it is difficult to conceive how a TDC program could trigger property rights violations, it is very likely that there will be a *perception* that they do. As in many cases, the perception is the working reality, and communities implementing these programs must be both clear around their jurisdictional rights, and sensitive to the concerns on the part of local landowners that they are "losing" something to which they had a right.

As with any program, a legal challenge could come at anytime in the development and application of a TDC program. Municipalities need to involve their legal counsel in understanding the risks associated with the use of a TDC program throughout the life of the program.

### *Adjacent communities*

Background research and public consultation may show it would make sense to establish a multi-jurisdictional TDC program based on land use patterns and pressures and important conservation features. Two types of challenges arise here.

First, there will be an exponential increase in administrative challenges once the communities, local councils, agricultural interests, etc. of multiple jurisdictions must be coordinated. It is not an impossible task, and at least ten multi-jurisdictional programs are in operation in the United States (Pruetz 1997).

Second, many municipalities believe residential development has a net positive effect on their revenue stream. Notwithstanding that Cost of Community Services studies in the United States and in Red Deer County, Alberta (Greenaway and Sanders 2006) have continually shown this to be false, there will be some who see themselves carrying the 'burden' of a program (usually the ecological or agricultural which have a lower tax rate) while others receive the 'benefit' (increased tax dollars from increased development).

There is also a concern that jurisdictions limiting development in any way, will simply see a 'leap-frog' effect where unplanned growth and development move to the next county. This is a valid concern, though most local governments do not see it as sufficient cause for absorbing undesirable losses of valued landscapes, especially when the growth management tools may be equally available to adjacent jurisdictions.

As a result of these challenges, it is advisable that local communities seeking to establish TDC programs get a *regional* sense of the impacts and opportunities.

### *Intergovernmental relationships*

Unlike provincial and federal governments who derive their authority constitutionally, municipal governments are granted their authority through the province. While it appears all the components of a TDC program are legally available (Kwasniak, 2004), many municipalities will likely be cautious in creating TDC programs without explicit provincial direction.

Similarly, the establishment of tools focused on sustainable land use and growth management lies largely within the purview of the provincial government, federal government agencies must be sensitive to the limitations in the role they can play catalyzing the development of TDC programs.

Nonetheless, each has a role to play, and proper coordination of those roles can effectively turn this challenge into a synergistic opportunity (see *Potential Policy Applications*, above)

### *Under-resourced municipalities*

The use of accurate and up to date demographic, agricultural, ecological, historical, recreational, developable lands, etc. data to identify where agricultural conservation and increased development are desired is essential to moving towards a robust plan for reconciling conservation and development. Unfortunately few rural municipalities have this information.

The lack of funding and internal capacity needed to lay this groundwork is a serious barrier to effective TDC programs being established in rural communities. The establishment of programs may also require expert facilitation, real estate assessments, legal drafting, etc. Without access to this information local communities have difficulty linking their land use planning activities to their goals.

## Factors of Success

Determining which factors account for the success of any program is difficult, and more so as the complexity and variety of the program increases. The following is a preliminary assessment of which factors appeared to be related to success in the case studies the authors reviewed, and based on communications with key individuals and municipalities, particularly in Alberta, Colorado and Maryland.

Although very little research appears to have been conducted that successfully generalizes the conditions of success for TDR programs, one recent effort to do so for American TDR programs (Kaplowitz et al, in press) found a number of program features positively correlated with their measures of success (acres preserved, number of transfers, and respondent opinion). Briefly these were:

- Joint existence of a Purchase of Development Rights (PDR) program;
- Undertaking of background studies;
- Establishment of a TDR bank; and
- Type of development demand (specifically that programs aimed at addressing housing development correlated with success).

### *DEFINING SUCCESS*

Although Kaplowitz et al (in press) found significant evidence to dispel the common perception that programs with multiple goals are not successful, it is likely that the more important consideration is the clear articulation of the goals of the program. Without these, it is impossible to define success.

As noted before, despite all programs being unique, there are several common factors related to defining success:

*Compatibility of goals* – many programs seek to conserve agricultural, environmental, recreational and other goals; however, these goals much be individually clear, and assessed for incompatibilities; for example, promoting recreational activity on agricultural landscapes may seriously affect program participation from agricultural operators;

*Get the measure right* – the goal of a farmland preservation program may be to ensure a critical mass of agricultural land is maintained in the community, in which case a total-acres measure may suffice; however, if the goal is to protect the viability of the agriculture industry by protecting agricultural land, then simple acres may not tell the whole story;

*Success varies with time* – one- and two-year time frames are unrealistic when judging the effectiveness of a TDC program. Successful programs set long-term goals and recognize that there may be relatively little activity in the first few years, and that activity may always be erratic;

### *CONNECTION TO COMMUNITY VISION*

Based on our discussions with various municipalities, there appears to be a dangerous temptation to focus first on development of the TDC tool, and second on tailoring that tool to a community-based desire to conserve valued landscapes. The successful programs the authors reviewed related the TDC tool to pre-existing, well-established conservation goals. For example, in Boulder county, Colorado, comprehensive plans had for many years reflected residents' desire to see a physical separation between two large cities in the county; a desire supported by transferring development potential out of that greenbelt. Similarly, in Montgomery County, Maryland, build-out scenarios several decades back highlighted for residents the future they did not want to see; the search for solutions brought them to TDR's.

The research of Kaplowitz et al. (in press) contradicted the subjective belief that multiple purpose programs were more successful because they were more inclusive. The reverse was in fact found to be the case.

### *ON-GOING ENGAGEMENT OF KEY STAKEHOLDERS*

On-going communication with, and genuine buy in of key stakeholders is critical to program success. Some key stakeholders types will be the same regardless of the program, whereas some will vary.

TDC programs are generally set up for a primary purpose (though there may be secondary purposes). The community that stands behind the primary purpose is a key stakeholder. In the case of programs established to conserve agricultural land, it is vital to get the agricultural community aware of the program facets and involved in communications in an on-going way. If that community does not believe the program will accomplish the goal, that becomes a self-fulfilling prophecy.

Other key stakeholders include the Council and staff within municipalities, the development community, and the voting public (especially in the case of a county-wide program or one that proposes significant action like down-zoning).

### *WELL-CONCEIVED CREDIT SYSTEM*

The authors had the opportunity to meet and discuss program success with planners, real estate agents, brokers, landowners, developers, and others involved in four successful American TDR programs. Discussions about the implementation preferences and concerns generally centred around how credits were assigned, the value of them to sending area parcels, the ratios for their transfer, the influence of administration on their cost structure, etc.

Clearly, a well-conceived credit system has a large impact on participant buy-in, and therefore the smooth and effective operation of a TDC program. Characteristics of which participants spoke favourably included :

- fundamentally fair, especially with regard to transparency in the development and implementation of the system;
- complex enough to achieve the program goals, but simple enough to understand readily;
- market-based, with minimal interference from the administrative body; and
- TDC "credit banks" which buy credits from conservation-area landowners, and provide one-stop-shopping for developing landowners.

It is important to note that there is no set or "average" price that credits are generally exchanged for. The individual systems, credit ratios, market forces, etc. provide too much circumstantial influence for a trend to be generalized across programs.

### *ATTRACTIVENESS TO DEVELOPERS AS WELL AS CONSERVATIONISTS*

Success seems to be dependent on securing the participation of developers and conservationists (for example, agricultural land preservation proponents), perhaps at different critical stages. Kaplowitz et al (in press) found that of the range of potential program initiators, only preservationists and government agencies as initiators were positively correlated with success. However, the authors' review found that government agencies and program facilitators identified developers as a key player whose participation was to be actively cultivated.

It is likely that the preservationists are critical at the 'front end' of a program (getting conceptual buy in across the community, engaging voluntary participants in the early stages). Conversely, developers fully engage at a latter stage, once discussions surrounding the mechanics of credit systems become detailed. At that stage, it also becomes clear if participation is mandatory, so incentives and recruitment take on a much different character.

### *SUPPORT/COORDINATION WITH COMPLEMENTARY PROGRAMS*

In site visits with the American case studies, it was rare not to be led to a different department and told about a complementary program. These were presented as pieces of a whole. Examples included the Great Outdoors Colorado-supported Parks and Open Space PDR (Purchase of Development Rights) in Boulder County; the Agricultural Preservation Board in Calvert County, Maryland; the Smart Growth Maryland state programs in Montgomery County; and the Rural Land Use Process in Larimer County, Colorado.

As well, all program managers spoke to research and communication services which their programs relied on.

The underlying message was the inability of the TDC program alone to accomplish all the valued landscape conservation work within any community.

### Support from Other Levels of Government

Although the exact nature of support is debated, some level of provincial support is valuable, and may range from helpful to critical. Because municipalities get their powers from the Province, conversations with municipalities in Alberta indicated a nervousness in proceeding with a TDC (or any) program without some measure of support from the higher level government. Having said that, in the United States there are 33 states with Transfer of Development Rights programs, but only 23 states that have enabling legislation (Pruetz and Pruetz, 2007).

Certainly a provincial-level policy indicator would alleviate this nervousness, but would likely also provide critical support and direction given the newness and uncertainty around the tool. Kaplowitz et al. (in press) note that the presence of enabling TDR legislation is not critical for success, but note several related state-level efforts are, including background studies, complementary programs, and TDR banks. Additionally, the complementary tools that are offered legislatively at the provincial level, such as conservation easement legislation are critical to TDC program viability.

### Flexibility and Stability

In each of the four American programs the authors reviewed in depth, participants and program developers spoke (sometimes explicitly, sometimes implicitly) to the need to balance flexibility and stability. Programs are ever-changing, and aptly so. Like all things, those that evolved were able to keep pace with the changes in the economics and landscapes of their region.

However, many participants, especially real estate agents, brokers and developers, spoke to frustrations with changing rules. Their continued engagement seemed based on their on-going communication, and sense that they were at least being made aware to the best degree possible of those changes. Not surprisingly, in a different breath they also spoke to their specific desires for program change.

### Equity and Fairness

When conversations are initiated around the TDC tool, the feature that attracts perhaps the most attention is the ability to 'level the playing field;' that is, that the program creates a financial benefit for *conserving* as well as *developing*. Community members appear to be drawn to programs which provide equitable opportunities for all landowners to the greatest extent possible.

For this reason, programs, especially the underlying credit systems, seem to be scrutinized for fairness and equity by all stakeholders. The programs the authors reviewed went to significant lengths not only to be fair and equitable, but also to be *seen* as such.

## Conclusion

TDC programs show great potential for supporting agri-environmental policy in Canada, but they must applied carefully. The ability to address agricultural and ecological conservation, while simultaneously supporting appropriate development makes it a potentially strong tool. As well, its extensive ability to adapt to local circumstances makes it a powerful tool which can have application all across Canada.

Despite being a tool which is operationalized at the local community level, there is an important role for federal government agencies to play, especially in conjunction with their provincial colleagues. Federal focus should be directed primarily to education/promotion, national collaboration, and targeted program and financial support.

In seeking out the policy applications it is important to remember that it must support, and clearly so, existing agri-environmental conservation goals. Those goals must be aligned across jurisdictions. Properly conceived and catalyzed, Transfer of Development Credits programs have the potential to strongly support the agri-environmental goals under the Growing Forward policy framework.

## SELECTED REFERENCES

### Documents


Agriculture and Agri-food Canada (AAFC). 2006. The Agricultural Policy Framework: An agricultural policy for the 21st century.

American Farmland Trust. 2001. "Transfer of Development Rights (Fact Sheet)." Distributed by the Farmland Information Centre (www.farmlandinfo.org).

Atkins, J., A. Hillyer and A. Kwasniak. 2004. *Conservation easements, covenants and servitudes in Canada: A legal review*. Report No. 04-01. North American Wetlands Conservation Council (Canada), Ottawa. 137 pp.

Calvert County Agricultural Land Preservation Board. 2005. Agricultural Preservation Rules and Regulations. *Calvert County, Planning, Agricultural Preservation.* (Downloaded March 31, 2008. from http://www.co.cal.md.us/assets/Planning_Zoning/Ag_Pres/RulesRegulationsFINAL2005.pdf)

Corvalis Consulting Group. "Evaluation of the City of Vancouver's Heritage Density Transfer System." 2002. *City of Vancouver, Community Services, Planning: Current Planning*. (Downloaded March 15, 2008 from <http://www.city.vancouver.bc.ca/commsvcs/planning/heritage/finalreport.pdf>)

Good, Kimberly and Sue Michalsky. 2008. Summary of Canadian Experience with Conservation Easements and their Potential Application to Agri-Environmental Policy. Prepared by Good Ag Ventures Inc. for Agriculture and Agri-Food Canada.

Greenaway, Guy and Kimberly Good. 2008. *Transfer of Development Credits in Alberta: A Feasibility Review*. Prepared by the Miistakis Institute for the Sustainable Resource and Environmental Management (SREM) office of the Government of Alberta.

Greenaway, Guy and Stephanie Sanders. 2006. The Fiscal Implications of Land Use: A "Cost of Community Services" Study for Red Deer County. Report 2. Prepared by the Miistakis Institute. 38pp.

"Heritage Building Rehabilitation Program and Transfer of Density Review." *City of Vancouver, Community Services, Planning: Current Planning*. (Downloaded March 15, 2008 from http://www.city.vancouver.bc.ca/commsvcs/planning/heritage/review/index.htm)

Hoffman, Nancy, Giuseppe Filoso, and Mike Schofield. 2005. *The loss of dependable agricultural land in Canada*. Rural and Small Town Canada Analysis Bulletin Vol. 6, No. 1 (Catalogue no. 21-006-XIE). Statistics Canada: Ottawa, ON.

Horner, Wesley R., AICP, Kate Brown Garrett, John D. Snook, and John E. Theilacker, AICP, 2003. *Transfer of Development Rights: A Flexible Option for Redirecting Growth in Pennsylvania*. Brandywine Conservancy, Pennsylvania.

Kaplowitz, M., P. Machemer, and R. Pruetz. In press. "Planners' experiences in managing growth using transferable development rights (TDR) in the United States." *Land Use Policy* (2007).

Kwasniak, Arlene. 2004. "The Potential For Municipal Transfer of Development Credits Programs In Canada." *Journal of Environmental Law and Practice* 15 (47-70).

Pruetz, Rick and Erica Pruetz. 2007. "Commentary: Transfer of Development Rights Turns 40." *Planning and Environmental Law*. Vol. 59(6): p.3.

Pruetz, Rick. 2003. Beyond Takings and Givings: Saving Natural Areas, Farmland and Historic Landmarks with Transfer of Development Rights and Density Transfer Charges. Arje Press. Burbank, CA.

Pruetz, Rick. 2002. "Trends in TDR." Presented at the Conference of the American Planning Association. Chicago, IL. (Downloaded August 2005 from http://www.asu.edu/caed/proceedings02/PRUETZ/pruetz.htm)

Pruetz, Rick. 1997. Saved By Development: Preserving Environmental Areas, Farmland and Historic Landmarks With Transfer of Development Rights. Arje Press. Burbank, CA.

Pruetz, Rick. *TDR Case Studies Updates*. Beyond Takings and Givings. (Downloaded March 2, 2008 from http://www.beyondtakingsandgivings.com/updates.htm)

"Retaining Affordable Housing". *Policy and Regulations*. Canada Mortgage and Housing Corporation. (Downloaded March 12, 2008. from <www.cmhc-schl.gc.ca/en/inpr/afhoce/tore/afhoid/pore/reafho/reafho_001.cfm>)

"Subdivision Activity Record" *Fieldnotes*. Spring 08. Palliser Regional Municipal Regional Services. (Downloaded March 19, 2008. from http://www.palliserservices.ca/Spring08.pdf)

## Personal communications

Leitch, Elizabeth, Communications Manager, Calgary Chamber of Commerce, August 2007

McCaw, Paul, Heritage Planner, City of Toronto, March, 2008

Plouffe, David, Heritage Planner, City of Calgary, August 2007

Sanford, Heather, L.M. Montgomery Land Trust, March 17, 2008