

**“WE’RE IN THIS ALL TOGETHER:” COMMUNITY IMPACTS OF LONG-DISTANCE  
LABOUR COMMUTING**

**Sean Markey, Associate Professor**  
Centre for Sustainable Community Development  
Simon Fraser University  
TASC2 8900, 8888 University Drive  
Burnaby, BC Canada V5A 1S6  
Phone: 778-782-7608  
E-mail: [spmarkey@sfu.ca](mailto:spmarkey@sfu.ca)

**Laura Ryser, Research Manager**  
Rural and Small Town Studies Program  
University of Northern British Columbia  
3333 University Way  
Prince George, B.C. Canada V2N 4Z9  
Phone: 250-960-5320  
Fax: 250-960-6533  
E-mail: [ryser@unbc.ca](mailto:ryser@unbc.ca)  
\*\*Corresponding author

**Greg Halseth, Professor**  
Canada Research Chair, Rural and Small Town Studies  
University of Northern British Columbia  
3333 University Way  
Prince George, B.C. Canada V2N 4Z9  
Phone: 250-960-5826  
Fax: 250-960-6533  
E-mail: [halseth@unbc.ca](mailto:halseth@unbc.ca)

Submitted to: Rural Society  
October 16<sup>th</sup>, 2014

**This is an accepted / original manuscript of an article published by Routledge, Taylor and Francis in Rural Society in 2015, available at: <http://dx.doi.org/10.1080/10371656.2015.1060717>.**

## **“WE’RE IN THIS ALL TOGETHER:” COMMUNITY IMPACTS OF LONG-DISTANCE LABOUR COMMUTING**

### **ABSTRACT:**

Labour and economic development patterns in rural regions have shifted substantially as a by-product of both economic and political restructuring. An important manifestation of this restructuring has been the growth of long distance labour commuting (LDLC) associated with increased labour flexibility and worker / family preference. In this article, we draw upon research in Mackenzie, British Columbia (BC), Canada, to explore the broader impacts of LDLC on a home community from a series of different perspectives. Our findings focus on two core themes: 1) family and community dynamics; and, 2) the capacity of community organizations. Numerous negative outcomes associated with LDLC were found, including family stress and volunteer burnout. Our research also revealed a variety of positive dimensions associated with LDLC, including the ability to continue to call Mackenzie home and a strengthened sense of community. The experience in Mackenzie offers important themes for research in other communities and places experiencing LDLC.

### **KEYWORDS**

Labour; commuting; rural development; community development

### **INTRODUCTION**

Rural and small town regions across the industrialized world have been undergoing significant transformations due to industrial and political restructuring since the early 1980s. These changes are defined by processes of disengagement by government and industry. Direct responsibility for community development and increasing flexible production fundamentally reshaped the social contract between workers and companies that had previously defined the relative stability and growth of the post-war period. Labour and economic development patterns shifted substantially as a by-product of these restructuring dynamics. A key change is growth of long distance labour commuting (LDLC). LDLC describes a situation where the workplace is isolated by a distance of at least 200 kilometres from the worker’s home community (Öhman & Lindgren, 2003). Workers have become more flexible and are either bound by preference or economic circumstance to remain in-place. Worker mobility is a direct response to community economic decline and/or opportunity that is, in essence, placeless.

LDLC studies have focused upon a variety of areas, including social dynamics associated with mobility, factors motivating industry to pursue LDLC operations, high-risk behaviours, health and safety implications and employment and income benefits for workers (Di Milia & Bowden, 2007; Kinnear, Kabir, Mann, & Bricknell, 2013; Muller, Carter, & Williamson, 2008; Standing Committee on Regional Australia, 2013; Storey, 2001; Wagstaff & Sigstad Lie, 2011). A critical gap in the literature, however, concerns broader impacts and implications of LDLC on home and host communities (Markey, Storey, & Heisler, 2011), where home community refers to workers’ permanent residence and host community refers to the place where people commute to work.

This article draws upon research in Mackenzie, British Columbia (BC), Canada, to explore broader impacts of LDLC on a home community. Mackenzie is one of BC’s “instant towns”, built in the late 1960s to house the workforce for a new regional forest industry (Halseth & Sullivan, 2002; Marchak, 1983). A significant economic downturn in Mackenzie beginning in early 2008 resulted

in the closure of all major forest industry operations, sawmills and pulp and paper mills (Hoekstra, 2010). In response, many forest sector workers chose to engage in LDLC.

LDLC literature evidences the process has complex implications for workers, families and host communities which may be examined through the Mackenzie case study. First, the nature of LDLC often differed from past sedentary work experiences. Second, Mackenzie is an isolated small community with clearly defined boundaries. Third, the turn to LDLC was sudden, intense and time limited. Finally, following the recovery of the local economy, most workers relinquished LDLC, which provided reflective distance from the experience. The Mackenzie case explores the complex process of LDLC, such as fly-over, drive-in and direct and indirect implications for the home community. Research limitations include the single case community focus, lack of longitudinal tracking of impacts and inclusion of only those commuting from Mackenzie, not those temporarily or permanently relocated.

In the next sections, the theoretical framework and key LDLC literature themes are followed by the case setting and a detailed overview of the research methods. Our findings focus on two core themes: (1) family and community dynamics; and (2) the capacity of community organizations. The article concludes with a discussion of research implications and recommendations for home communities experiencing LDLC, adding to the LDLC literature by revealing consequences of labour mobility on home communities. While much existing literature focuses on negative impacts, our findings clearly indicate positive outcomes for communities embracing LDLC opportunities as a way to maintain family and connections in home communities. Given this focus on both negative and positive dynamics, our central research question is: How does a community manage to maintain good local quality-of-life and strong community bonds in circumstances where workers are routinely absent for long periods of time?

## **Literature review and theory**

### ***Staples theory, restructuring and LDLC***

Staples theory provides a foundation for understanding the roots of long-term extraction of natural resource commodities in a Canadian context (Barnes, Hayter, & Hay, 2001; Innis, 1933) and has also been applied to understand extraction-driven economies in other countries, such as Australia and New Zealand (Taylor, Larson, Stoeckl, & Carson, 2011). For our purposes, the theory offers a contextually grounded approach for understanding impacts and patterns of development. Staples theory highlights the effects of transporting raw materials over long distances, causing weaknesses in other lines of development, dependency on external industrialized areas for value-added processing, markets and supplies of manufactured goods, and dependency on external sources of capital to cover the high costs of resource development (Hayter, 2000; Hayter & Barnes, 1990).

Hayter and Barnes (1990) isolated the recession of the early 1980s as a turning point in the development of the BC economy. In the pre-1980 period, the staples macro-environment and a localized Fordist compromise facilitated rapid population expansion and economic activity in northern BC, linking industry and government with labour and, indirectly, with rural and northern communities. Forestry, oil and gas, mining and hydroelectric activities fuelled the region's expansion while layoffs and closures resulted in population loss for the first time since World War

Two (Hutton, 2002). The link between staples theory and LDLC in our study is rooted in the impacts on community. Northern resource towns built during the 1960s and 1970s originally designed to accommodate the workforces of local resource industries (Bradbury, 1980; Markey, Halseth, & Manson, 2012) are now immersed in much more fluid flows of both labour and capital. Following the global recession of 1982–84, government and industrial restructuring shifted away from building new single industry communities, or “instant towns”, in Canada’s resource frontier regions (Storey, 2010). Rising costs, lengthier approval processes, increasingly strict environmental regulations and an increasing absence of senior levels of government from town development all supported a shift in preference towards LDLC operations (Humphreys, 2000; McDonald, Mayes, & Pini, 2012; Storey, 2010).

### *LDLC origins and impacts*

LDLC is not a new phenomenon despite the expanded interest in labour mobility issues. Contemporary LDLC has its origins in the offshore oil industry after World War Two (Gramling, 1995) and has since become a common feature of the labour landscape in Australia, North America, Russia, Norway and many other OECD countries (Sandow & Westin, 2010; Spies, 2006; Storey, 2001, 2010). While LDLC operations share some basic elements, specific differences exist in the roster arrangements adopted. For example, offshore oil and gas projects are typically three weeks on/three weeks off (21/21) for those on rigs and platforms, 28/28 for those on supply vessels. Mine rosters show more variety with 7/7 standard for most workers at Saskatchewan uranium operations and 14/7, 14/14 and 21/7 commonly used at mines elsewhere. The construction sector has the greatest range of rosters influenced, in part, by the home location of workers. For example, Newfoundlanders working in Alberta on oil sands projects typically work 20/8, 21/7 or 42/14 rosters.

The business case for LDLC has been advanced by at least four political and economic restructuring forces (Storey, 2009). These include the cost of running camps versus the extraordinary costs associated with new town development, including costs associated with increased regulations concerning environmental impact. Restructuring within the mineral sector places greater attention on productivity, reduced production costs and the rationalization of unproductive operations (Storey, 2001; Tonts, 2010). Furthermore, while many workers and families enjoy the lifestyle offered by the isolated resource-based town, the economic and social problems often associated with such communities are well documented (Aroca & Atienza, 2011; Robinson 1984; Robson 1988; Sandow, 2011). With increased expectations for access to diverse employment, educational opportunities and metropolitan lifestyles, there are fewer workers and families willing to live and work in remote single-industry communities. Finally, companies may experience less difficulty in attracting and retaining workers using LDLC (Glass & Lazarovich, 1984; House of Representatives Standing Committee on Regional Australia, 2013; Newton, 1986). Labour supply issues are exacerbated by the ageing of the current workforce and the limited success with attracting and training new entrants to meet increased demands and replace retirees. In looking for ways to attract and retain workers, in addition to salary inducements, companies are turning to provision of better quality accommodation and meeting demands for more flexible work arrangements, which LDLC can offer (Standing Committee on Regional Australia, 2013).

Inherent within the business case for the use of LDLC are considerable changes to the industry-community relationship forged during the post-war period. These changes affect both host and home communities. The economic contribution of industry to communities has become increasingly variable. Labour shedding and vertical integration processes have altered the direct economic impacts of industry (Bollman, 2007). Indirectly, industries are less beholden to the local or regional labour supply, characterized as the “fly-over” effect whereby communities proximate to resources are excluded from the direct and indirect economic benefits associated with exploration and extraction. Mitigating the fly-over effect requires companies to consider local operations and communities and be more proactive and entrepreneurial in their ability to engage with regional resource operations at all levels (Heisler & Markey, 2013).

LDLC home community impacts are less robust in research literature. Themes investigated include spousal stress, family dislocation, substance abuse, conflict and violence (Houghton, 1993; Kinnear et al., 2013; Kuyek & Coumans, 2003). The term “mine widow” is often used in community settings to describe, in visceral terms, the reality faced by spouses who remain at home. While women may be required to assume additional responsibilities, domestic labour for example, there is a loss of informal family support for spouses, children and older parents who remain in the home communities (Newhook et al., 2011). Many of these communities are already challenged with under-resourced services and organizations with high workloads and difficulty retaining skilled workers (Kinnear et al., 2013). Children can also be affected by labour mobility as the absence of a parent can influence their behaviour, preparedness and performance in school and other activities (Hiew, 1992; Morrice, Taylor, Clark, & McCann, 1985; Wray, 2012).

There are also concerns about the cumulative impacts of LDLC over time on workers and their partners. Torkington, Larkins and Gupta (2011) argue isolation and changes in social environments emerge both within families and across the community, resulting in depression, anxiety and other mental health disorders, as well as substance abuse and risky behaviours. In response, some research suggests workers with longer shift rotation schedules have more positively coped with family life because of reduced commuting time and costs, improved sleep patterns and more time at home (Hanoa, Baste, Kooij, Sommervold, & Moen, 2011). It is also suggested earnings acquired through LDLC enhanced the ability of households to adopt better nutritional habits, access higher quality healthcare and have more discretionary income to support family engagement in recreational activities (Torkington et al., 2011). Community playgroups and support groups, for example, have been formed by families in home communities to share coping strategies and access broader forms of informal supports for “functional lone-parent” families (Standing Committee on Regional Australia, 2013).

Decline in community engagement as workers and family members are unable to participate in organized sports and other community activities (Kinnear et al., 2013; Torkington et al., 2011) and competition for scarce resources affecting interaction, cooperation and trust within the community (Fowler & Etchegary, 2008) are also notable in the literature. As McDonald et al. (2012, p. 24) argue, LDLC arrangements “splinter the workforce and town, generating discontent and breaking up the traditional physical intimacy of rural spaces”. Shrimpton and Storey (1992) also document impacts associated with the removal of skilled workers from communities, affecting both existing operations and community capacity to embrace new economic opportunities. Despite the growth of LDLC (Sandow & Westin, 2010), however, limited research explores how these experiences

shape the community capacity in home communities to respond to emerging challenges and opportunities.

## Research methods

### *Study site*

Mackenzie is located in north-central BC, Canada, a drive of approximately two hours from the closest regional centre in Prince George (Figure 1). The population was 3507 in 2011. Since the 1980s, the population has declined due to an economic recession and a repeated set of “jobless” recoveries in BC’s forest sector (Hanlon, Halseth, Clasby, & Pow, 2007). A significant economic downturn in Mackenzie beginning in early 2008 resulted in the closure of all major forest industry operations, particularly sawmills and pulp and paper mills in the community (Hoekstra, 2010). In response, many forest sector workers chose to engage in LDLC, the first experience with LDLC practices for many. By 2011, however, Mackenzie’s forest industry was back in operation, causing most, but not all, of the forest sector workers to return to their previous jobs (Burnett, 2011) while some chose to continue with LDLC.

FIGURE 1: LOCATION OF STUDY SITE



Map credit: Kyle Kusch.

### *Research aims*

This research seeks to develop a better understanding of how LDLC is transforming rural and remote landscapes through long-term workforce transformation or as a stop-gap measure until the return of traditional resource activities. This speaks to the future of rural and small town communities and how LDLC will shape the next rural economy. When LDLC becomes common practice, there are impacts on families, communities, workers, local organizations, government and

so on. In this article, we focus on the impacts of LDLC on the home community. In turn, this will provide a better understanding about how the LDLC phenomenon is shaping opportunities and challenges across rural landscapes.

### ***Research instruments***

To explore the impacts and benefits of LDLC in Mackenzie, BC, we used two methods: a survey and key informant interviews. We distributed a household survey in May 2012, with the assistance of the District of Mackenzie. The household survey was included with municipal tax assessment notices to a total of 1537 residents. We placed drop-off boxes at the District of Mackenzie office and at the Mackenzie Recreation Centre. The research team also set up a booth at the local shopping centre to provide residents with an opportunity to return completed surveys. A total of 633 households returned the survey, yielding a response rate of 41.2% and a sampling error between 2.4% and 4.1% (Babbie, 2004). The survey involved closed- and open-ended questions that probed respondents' household participation in LDLC, demographic characteristics of LDLC workers, location and length of time worked out-of-town, sector of employment, shift rotation schedule and how LDLC affected their work experiences. Closed ended questions were entered into an SPSS database.

We also conducted key informant interviews with community clubs and organizations during the same time period in May 2012, to study the impacts of LDLC on community engagement and local organizations in Mackenzie. We recruited a total of 17 participants using publicly available lists of community organizations and groups. Many participants were involved with multiple community organizations, such as sporting clubs, emergency/community services, arts and cultural groups, service clubs, the local chamber of commerce, local government and youth clubs. All interviewed were in leadership roles within their various organizations and approximately two thirds were long-time residents (10 years or more) in the community. Interviews lasted between 30 minutes and one hour, were audio recorded and the draft text provided to interviewees for review to ensure accuracy.

### ***Data analysis***

Responses were evaluated through latent and manifest content analysis by two members of the research team (Krippendorff & Bock, 2009). To improve consistency and reliability, members of the research team worked in the same office to code and categorize themes emerging from early interviews to develop a common coding approach. As new codes and themes emerged, they were shared and discussed across the coding team and evaluated against the interview texts during the course of multiple rounds of coding. The research team consolidated information about LDLC experiences for a range of subject areas as part of the manifest content analysis and by highlighting key words created a series of categories and sub-categories (Andersen & Svensson, 2012). Latent content analysis was conducted by the research team exploring deeper meanings and connections across themes.

### ***Research strengths and limitations***

Due to the in-depth, exploratory nature of the interviews, our intention is not to produce empirical evidence about the impacts of LDLC on the community. We provide a foundation for a more

comprehensive investigation and development of policies and services to support communities to manage an increasingly mobile workforce in resource hinterlands. Our findings, therefore, must be placed within the context of our study’s limitations. For example, non-response bias was encountered with some surveys as participants skipped, did not answer or were unsure of accurate responses questions (such as date when LDLC began for household members). Furthermore, due to the difficulty of reaching LDLC workers who spend a lot of time outside Mackenzie, the research team chose to use multiple methods to recruit LDLC participants. This produced important caveats, including selection bias from convenience sampling at the local mall and its potential impact for external validity of issues identified through key informant interviews (Reed, Foley, Hatch, & Mutran, 2003). Combined, however, these approaches provide a comprehensive portrait of LDLC activities and experiences, offering insight into how the region’s rural labour market may be changing in response to resource restructuring pressures and the potential impacts on rural and small towns.

## Findings

### *Survey results: characteristics of LDLC workers*

This section includes a brief description of the demographic characteristics of LDLC workers and characteristics of their out-of-town work. When survey respondents were asked if any household member worked out-of-town for an extended period of time following the 2008 mill closures in Mackenzie, 26.9% said “yes” (Table 1). Some households had multiple members engaged in LDLC. As such, our sample has a higher proportion of out-of-town work commuters compared with trends revealed by 2006 Census data. This is unsurprising given the mill closures in 2008 prompted much of the labour force to search for employment in other communities.

TABLE 1: MACKENZIE RESIDENTS WHO COMMUTE OUT-OF-TOWN FOR WORK

---

Number of survey respondent households with a LDLC worker:	170
Total number of survey respondents:	631
% of total survey respondents who commute:	27
Number of residents in 2006 Census who commute out-of-town:	95
Total labour force 15 years and over by commuting flow (2006 Census):	2240
% of labour force 15 years of age and older who work out-of-town:	4

---

Source: Mackenzie Community Survey 2012; Statistics Canada 2006.

Note: Data on commuting flows from the 2011 National Household Survey have not yet been released by Statistics Canada.

Approximately 85% of family members who worked out-of-town in LDLC were male (Table 2). Many were 50 years of age and older (43%), and 29% were middle-aged workers between 40 and 49 years of age.



TABLE 2: CHARACTERISTICS OF MACKENZIE RESIDENTS WHO COMMUTE OUT-OF-TOWN FOR WORK

Gender	% of respondents	Age	% of respondents
Male	85	Under 30 years	14
Female	15	30-39 years	14
		40-49 years	29
	N=186	50-59 years	30
		60 years and older	13
			N=181
Start date of LDLC	% of respondents	Date LDLC workers returned to work in Mackenzie	% of respondents
Before 2008	19	2007	1
2008	55	2008	5
2009	17	2009	18
2010	8	2010	32
2011	7	2011	17
2012	3	2012	7
Other	1	Other	21
	N=169		N=103

Do LDLC workers % of respondents still work out-of-town?

Yes	40
No	60

N=172

Source: Mackenzie Community Survey 2012.

Note: respondents who had multiple LDLC workers in their households provided multiple responses.

Just over half (55%) of the family members who identified as LDLC workers began to work out-of-town in 2008 when the mills closed in Mackenzie. An additional 17% began the following year. Almost 10% had already been commuting out-of-town for work prior to the 2008 mill closures. When asked if their family members continue to work out-of-town, approximately 40% said “yes”. Amongst those who said “no”, 32% of the LDLC workers reported they had returned to work in Mackenzie in 2010, followed by 18% who returned in 2009 and 17% in 2011. Amongst those who

said “no”, approximately 21% had “other” cited reasons for workers’ return to Mackenzie due to job loss, retirement or temporary breaks from out-of-town work.

The most prominent locations for out-of-town work in BC were the Peace River Region, Prince George and the Kootenays, as well as places in Alberta, such as Fort McMurray and Grand Prairie (Figure 2). LDLC workers were predominantly employed in forestry (23.7%), oil and gas (21.0%) and mining (19.9%). However, some also worked out-of-town in various trades (7.5%), construction (7.0%), transportation (6.5%) and community services (13.4%). Most LDLC workers (64%) also had a shorter shift rotation schedule where they were out-of-town for less than one week. However, 31% were required to work a longer shift rotation schedule and were, therefore, out-of-town for two weeks or more at a time, which is relevant to findings about community and family dynamics associated with being away (Table 3). Only four households in our sample worked on contract and five were employed seasonally as the remainder (186) worked full-time, regularly scheduled LDLC shifts.

TABLE 3:  
SHIFT SCHEDULE OF LDLC WORKERS

	# of responses	% of responses
<b>Shorter Rotation</b>	109	59
5 on 2 off	36	19
4 on 4 off	25	13
7 on 7 off	15	8
Other	33	18
<b>Longer Rotation</b>	63	34
21 on 7 off	14	8
14 on 7 off	13	7
Other	36	19
<b>Other</b>	16	9
Mixed	7	4
Seasonal	5	3
Contract basis	4	2
<b>Total</b>	<b>186</b>	

Source: Mackenzie Community Survey 2012.

Note: some respondents identified multiple shift rotation schedules for different jobs.

FIGURE 2: PROMINENT LOCATIONS FOR OUT-OF-TOWN WORK



Map credit: Kyle Kusch.

***Interview results: family and community dynamics***

The qualitative findings are organized around two core themes related to community impacts that emerged from our content analysis: (1) family and community dynamics; and (2) the capacity of community organizations. Each category describes the most commonly cited repercussions of LDLC and the community and family responses to the new patterns of relationships, social interaction and time spent away by LDLC workers.

**1. Family and community dynamics**

Participants noted three main themes related to the impacts of LDLC for family and community dynamics: (1) household responsibilities; (2) time with friends and neighbours; and (3) sense of community. First, LDLC impacted the restructuring of household responsibilities as the remaining spouse at “home” in Mackenzie assumed more responsibility for childcare and household duties. When the commuting worker returned to Mackenzie, their time was often consumed with attending to household repairs:

I think there was a lot more pressure put on the person doing the long distance commuting.

Mainly like the men because if they [are] at work for two weeks and home for a week, what they could do if they were working for three weeks here they had to do in one week. So it's not like they can come home and spend time with the wife and kids because you come home and the wife has her honey-to-do list. (Mackenzie Interview #15)

The time workers spent away from their families was also felt to impact spousal relationships. In some cases, this led to the break-up of relationships. As one resident noted, "I know it was hard on family life. I've seen marriages go down the tubes. When the cat's away, the mouse will play. That sort of thing. There were marriages that split up over it." (Mackenzie Interview #8). In addition to the time workers spent working out-of-town, they spent considerable time on their days off commuting back and forth to the job site. This left less time for family activities.

Second, participants felt LDLC meant families had less time to spend with friends and neighbours, which was a greater priority. This was particularly the case where commuters experienced fatigue from commuting and working out-of-town. Others noted working out-of-town for extended periods of time affected the ability of workers to maintain connections and social circles in the community. In contrast, those that stayed in the community spoke about the continued engagement with friends and neighbours as these residents provided both emotional support and helped with home maintenance tasks when partners were away for work. Community groups also pursued several initiatives to increase opportunities and support for social interaction, particularly for spouses and family members who remained in the community. For example, some participants told us:

I think the community did a good job in general in trying to provide those opportunities for people. So Mackenzie Counselling had a drop-in time for parents needing to bring their kids. So that's parents who were single parenting had an opportunity to get together. I think the district worked hard to keep recreational things happening. And keeping the whole Rec Centre open and working on a deficit to keep those things available to people in the community because they knew what people were going through. The Community Awareness Committee was meeting a lot more often during that time to monitor what was going on and to perceive what people's needs were and to make sure there were things to keep people entertained. So I think had there not been opportunities provided, there would have been people who didn't do anything else besides maybe work and look after their families because they just didn't have time. (Mackenzie Interview #4)

It was snow removal. And so we, through some of the churches, had a group set up that would go and shovel roofs and sidewalks and being some of the homes to cut down costs had wood burners in them so cutting down wood and doing those kinds of things for moms left with young families. (Mackenzie Interview #10)

Third, we asked participants how changes in opportunities to spend time with family, friends and neighbours affected their overall sense of community. Participants felt the time they spent with family, friends and neighbours helped to enhance their sense of community as it pulled people closer together. As one participant explained:

It wasn't so much less involvement, it was just different involvement. Because you would have three or four good friends with their hobbies out of town, they'd do more things

together with their friends...Even in the downturn, the sense of community actually got stronger. People pulled together. (Mackenzie Interview #15)

To a lesser extent, there were concerns expressed about decline in the “sense of community” as LDLC affected residents’ time and resources to engage in community activities and events.

As the economy declined, some residents needed to sell recreational vehicles and equipment used to engage with friends and community groups. As one participant explained:

Mackenzie had its tough times, but it was still an affluent community. Many houses had snowmobiles, quads, campers...That really made Mackenzie what it is. It was a big reality check for people to lose those opportunities. Some people had to sell some of those things that gave them pleasure. (Mackenzie Interview #8)

Participants spoke about how the local business community provided assistance as the local economy changed. Examples included increased flexibility in opening hours and loan, bill or debt repayment and accommodating lone-parent households. Economic leakage when families commuted to visit the LDLC worker in the host site was another change identified. Families’ time spent in other communities offered the opportunity to shop in larger regional centres. As one participant noted, “Hey let’s go meet daddy in Grand Prairie or let’s go meet daddy in Edmonton and do a whole whack of shopping there” (Mackenzie Interview #15).

## 2. LDLC impact on community organizations

We asked participants to describe LDLC’s impacts on community organizations and clubs. The most notable was a loss of membership that resulted in instability or the closure of community groups. It was perceived people were not routinely in the community as they had been for decades. Some new groups, such as a local food bank, however, formed to support residents between the period of industry closures and finding out-of-town work. Changes to the age composition of community groups’ memberships were also observed. Some felt memberships were ageing, a possible by-product of working-aged members leaving for employment in addition to the ageing population dynamics of rural and small town places. Church groups and services clubs, in particular, were impacted by the ageing composition of memberships. As one participant told us, “The activities we could do changed because our core group of volunteers are older men. They can’t do some of the work younger volunteers used to do like the house clean outs” (Mackenzie Interview #12).

Others noted while the registration of younger children in community groups remained high, there was a decline in retaining older children. To support the retention of members, groups – such as the local hockey club – took steps to keep membership costs low and offered a payment plan for membership fees. One sports leader noted, “We try to keep it really cheap. Like soccer is \$50. And in Prince George, it’s \$300” (Mackenzie Interview #2).

There was also a shift in the gender composition of members since most of the LDLC workforce was male. Women started to play an even greater role in community organizations, having previously been inactive, so their children would continue to have activities. For example, while

men had traditionally coached hockey and other sports teams, women now fulfilled these roles. As one female sports leader explained, “A lot of times, the wives have stepped up and taken the courses so they could coach something” (Mackenzie Interview #9). Another sports leader told us:

I do know that in Minor Hockey, it was a lot of the moms that really kind of kept it going 'cause there was a lot of the fathers who were out of town working. They were the ones dragging kids to hockey every morning. (Mackenzie Interview #11)

LDLC also impacted volunteering and general community engagement. The most noticeable change was a decline in community activities and programmes by both adults and children. One participant noted:

It's harder to get people out to community events. There's lots of people who've tried to put on events in the community, and officially, there have been parents who have young families say that they want the programmes and you should be putting them on, but actually getting attendance is nearly impossible. We advertise the programmes and are running them at a loss because there's maybe one family that will come out to it. (Mackenzie Interview #16)

Change in residents' capacity to engage in community groups was perceived due to age, time constraints and limited resources to support participation by club volunteers and limited time for community participation by spouses assuming more household responsibilities. Some participants felt LDLC workers and families were less inclined to commute and participate in out-of-town sports tournaments after commuting long distances for work. As one sports leader noted, there was “less travelling for competition and games” (Mackenzie Interview #9).

A number of community groups experienced a loss of board members and people willing to fulfil leadership or executive positions, and difficulty with the recruitment of volunteers and staff to provide instruction, coaching and other general volunteer duties:

I think the fact that families have one, or sometimes both parents, working out of town, because there was no work in town here and a lot of families chose to remain in Mackenzie, they had usually the dad go and work someplace else. So then that person was no longer available in the community to do something like say coach hockey. But also because the partner that stayed in town was a full-time parent, they also didn't have the time or I'd say energy to volunteer for things. And then when the dad came home, they would tend to do a family thing as opposed to something where their kid was not home. The parents wanted the kids to be home with the other parent and spend family time as opposed to going out. You know they'd be off and going camping for the whole weekend on the weekend when their dad was only home once a month and that was the weekend, they're not going to come to the guiding thing, they're gonna go camping. (Mackenzie Interview #4)

Several groups relied upon the same group of core volunteers, which often resulted in burnout as volunteers took on multiple roles, and had to broaden recruiting strategies. One participant noted an influx of new volunteers helped renew the capacity of some organizations:

I guess on the negative side, the impact has been the loss of some of these long-term, top-notch volunteers. But on the positive side, there certainly have been new people coming to town who have stepped up to the plate and tried to get involved in various organizations. So maybe an organization becomes stale because they're drawing from that same group and now you do have some new people to draw from. (Mackenzie Interview #7)

Recruitment strategies included the use of technology (such as radio or websites), print materials (such as newspapers and school newsletters), personal communication and community events (such as trade fairs, church events, open houses and union meetings). Due to time constraints with changes to household responsibilities and out-of-town commuting, it was easier for some groups to recruit older/retired volunteers. As one resident told us, "It's usually the age of 45 and older that we recruit simply because their children are of the age that they can take care of themselves so they have a little bit more time" (Mackenzie Interview #12). Other groups relied more heavily on female volunteers who remained in the community.

Community groups also expanded their human resources by bringing in coaches from other places, hiring new people to keep groups operating, targeting new residents in town, covering training costs, aligning training schedules with shift schedules of workers and offering a babysitting service to support participation. One participant explained, "Certainly for lacrosse and soccer, we don't have meetings unless there is someone to watch the extra kids. We're sensitive to that. So we offer babysitting so we can have our meetings" (Mackenzie Interview #2). Another noted:

With the closure of the mills, we lost specific trades because they needed to leave the community to find jobs to support the family. So Fort McMurray and Tumbler Ridge took a dent out of our membership here. To be able to maintain what we could, we brought on transient firefighters. So those were the ones that still resided in Mackenzie but would travel to Fort McMurray or Tumbler Ridge to work on a 4 on, 4 off schedule. I'd say we had about half a dozen members that would have say 4 on, 4 off and then they'd be back with their families for their time off and would carry a pager and try to be there as best they can. We'd have members who didn't come to practice for half a year at a time just because the way the schedules worked out. Some did, though, get their mine rescue training up in Tumbler Ridge and so they kept their skills up. (Mackenzie Interview #6)

LDLC's impact on the capacity of community organizations experiencing revenue decline due to residents worrying about their financial capacity to maintain two households, both in the home and host community, was perceived to be responsible for reduced donations, decline in organizations' registration fees and community hall rentals. In some cases, community groups could no longer afford to maintain their building. As one participant told us:

With the Kinsmen, the building that they had during good times was very self-sufficient. They had plenty of Christmas parties and events to subsidize the costs of the building. But during the downturn, everyone was scaling back. The Christmas parties were scaled back or sometimes didn't happen or went to a smaller venue. And eventually New Year's Eve parties or Hallowe'en parties weren't just well attended so definitely in the long run made the decision to sell the building. (Mackenzie Interview #14)

Thus, some organizations paid more attention to how they spent money, renewed infrastructure and renewed equipment. For example, through the federal Job Opportunities Program, the local fire hall built a smoke house building, improvements were made to local trail systems and garden beds and a gazebo were built for the community gardens. The fire hall optimized on mill closures, receiving equipment donations from industry response teams, such as breathing apparatuses. The local government shared its trail groomer with the local cross country ski club and snowmobile clubs. Some community groups merged with other organizations or pursued partnerships to strengthen expertise and human resources. For example, once the local radio station replaced its computer hardware, they recruited a mobile worker who had IT experience to volunteer and set up the computers. Resources were also pooled and joint training on hazardous materials was delivered to the fire department, search and rescue and ambulance volunteers. These examples all demonstrate greater collaboration between organizations, unnecessary in such a wealthy community in the past.

Some organizations were also able to obtain financial support from donors and organizations in other communities. One community representative explained:

And interestingly enough, for soccer the other day, I received a phone call from a gentleman in Prince George saying I've got money, you want it? And I'm thinking yeah, I'll take it. So last year and this year, I've had sponsors come from out of the blue and say you know, we're willing to help you out. But we kind of stopped asking because it's like how much, you don't expect people in this town to give because you know their businesses are struggling. (Mackenzie Interview #2)

Several community organizations became more flexible as LDLC workers were out-of-town for extended periods of time and groups no longer operated to match shift schedules at the closed mills. Some reduced hours of operation, moved weekday activities to weekends or offered supports on a need-by-need basis. Others rescheduled group activities to accommodate volunteers' work schedules. Several programmes were restructured due to cutbacks, combined age groups for recreation leagues or offered fewer, smaller activities and events, with more drop-in support services, social programmes and recreational activities. As one participant noted:

That was one shift that we made in the Old Timers is that we allowed for drop-in opportunities. So for those who were working out-of-town and happened to find themselves back in Mackenzie on their days off, the opportunity was still there for them to come and be part of the group. (Mackenzie Interview #11)

Such drop-in programmes not only provided important support for family members remaining in the community, but also ensured opportunities for LDLC worker engagement and community connection existed. Many participants felt the challenges and opportunities that emerged from LDLC increased the overall sense of community, pulling the community closer together during a time of crisis. One participant told us:

It's probably brought the community closer together. It's made people more aware of the community. It's taken people out of the state of mind they were in before and realized that we're in this all together. That's probably been the biggest change. (Mackenzie Interview #3)



Still, other participants felt LDLC negatively impacted the overall sense of community in Mackenzie as there were fewer people engaged in community activities and organizations.

## **Discussion and conclusions**

The case example of LDLC in Mackenzie provides an opportunity to examine new patterns of development and labour mobility in rural and small town British Columbia. The manifestations of the 2008 economic crisis were particularly harsh, resulting in massive closures in the local forest industry. This spurred an immediate turn to LDLC as a way of navigating the crisis and maintaining a sense of home continuity for workers and their families. The intensity of the experience and the sudden contrast with traditional patterns of embedded labour tied to local industry presented a unique case study to explore LDLC's impact on one community. While unique in its setting and particular economic and social conditions, findings may resonate with other rural and small town communities dealing with similar pressures associated with labour mobility.

Findings indicated numerous negative outcomes associated with the LDLC phenomenon, reflecting findings in the literature. First, community organizations that play such an important part in maintaining the fabric of community can experience decline in both participants and volunteers needed to maintain service and programme levels. This increases the potential for burnout and eliminates some services. Second, participants shared their stories of increased family stress associated with family members working away for long periods of LDLC on shift rotation. The stress of being at home as a functional lone-parent, having less support and time for non-essential activities, being away from loved ones and dealing with the physical demands of labour commuting sometimes led to family break-downs. Finally, the uncertainty associated with economic conditions exerted downward pressure on the local economy.

With the return of the local mill production in 2011, local labour patterns reasserted themselves in the community. While some workers chose to continue with LDLC, there was an obvious preference for living and working locally. Nevertheless, our research reveals a variety of positive dimensions associated with LDLC. First, LDLC provided an opportunity to continue to call Mackenzie home. Whereas past economic downturns in BC and across Canada resulted in considerable displacement and dislocation, workers and families in Mackenzie were able to survive a significant recession without uprooting themselves, speaking to the "sense of place" that exists in Mackenzie. Expression of the sense of community and rally to respond to crisis may reflect the unique geography, history and social dynamics of Mackenzie; or, it may be a more general reflection of how communities work together to address crisis or threat. The rallying of community support provided some consolation to the economic downturn that had depressing effects on the community as a whole. It is also clear that while some interpersonal connections were severed or reduced by LDLC, new relationships and activities were forged. New people became engaged in community activities and community organizations and services responded with flexibility. Finally, the local business community also responded with some flexibility to maintain operations for residents and made provisions for financial difficulty. Although participants were mixed in their overall impressions of LDLC's impact on the local economy, they conveyed it would have declined much more substantially in the absence of the stability and income being generated (and relocated) by LDLC activities.

LDLC is complex in its organization, operation and implications for workers, families and home communities. The experience in Mackenzie offers some important themes for further research in other communities and places experiencing LDLC, such as the need to better understand how communities deploy flexible responses to disruption and decline associated with a more mobile workforce. In our research, participants stressed the importance of maintaining community organizations and services. Organizing large community events played an important role in keeping people engaged, building a sense of community that was being frayed and to a certain extent, distracting people from the hardships of change and dislocation, similar to past research detailing negative personal and family impacts associated with labour mobility. Future research is required to better understand the demand for, and proactive deployment of, family support services to mitigate the transitions and persistent stresses associated with LDLC. Finally, given the complexity of the LDLC response (for example difficulty in tracking individual choices of workers) greater awareness about how to mobilize informal social networking and support for LDLC families is needed, particularly if the stresses of LDLC lead to a decline in community participation and social interaction so the emerging role neighbourhoods play to support families may be examined.

Mackenzie illustrates the intense challenges presented by being a home community for LDLC. When workers are routinely absent for long periods of time, the capacity of the community is challenged and drained as maintaining a high quality of life and strong community bonds is extremely difficult. The combined processes of industrial and political restructuring are acted out in all rural and remote resource-producing regions in OECD states. In Norway, for example, many workers from northern counties are now engaged in LDLC to offshore oil and gas as traditional sectors, such as forestry and fishing, decline. In Finland and Sweden, LDLC is accelerating to newly opening northern mines using new labour and production management regimes, while across Australia LDLC is dramatically increasing due to the burgeoning liquefied natural gas (LNG) industry. Longer standing experiences with LDLC for mining in Western Australia and Queensland has increased dramatically the scope and breadth of Australian places and regions serving as home communities for LDLC workers. Hence, the present study contributes to this growing international body of research, refining our understanding of LDLC and offering tangible comparative experiences and lessons for other communities undergoing similar processes.

## **ACKNOWLEDGEMENTS**

The authors thank the anonymous reviewers and the editor for their helpful insights and suggestions. We would also like to acknowledge funding from the Social Sciences and Humanities Research Council of Canada (430-2011-0475), the Canada Research Chair Program (grant 950-203491; 950-222604). Finally, thank you to the many individuals in Mackenzie who shared their knowledge and experiences with us for this research.

## References

- Andersen, J., & Svensson, T. (2012). Struggles for recognition: A content analysis of messages posted on the Internet. *Journal of Multidisciplinary Healthcare*, 5, 153–162. doi:10.2147/JMDH.S33418
- Aroca, P., & Atienza, M. (2011). Economic implications of long distance commuting in the Chilean mining industry. *Resources Policy*, 36, 196–203. doi:10.1016/j.resourpol.2011.03.004
- Babbie, E. (2004). *The Practice of Social Research*. Belmont, CA: Thomson Wadsworth.
- Barnes, T., Hayter, R., & Hay, E. (2001). Stormy weather: Cyclones, Harold Innis, and Port Alberni, BC. *Environment and Planning A*, 33, 2127–2147. doi:10.1068/a34187
- Bollman, R. (2007). *Factors driving Canada's rural economy, 1914–2006*. Ottawa, ON: Statistics Canada.
- Bradbury, J. (1980). Instant resource towns policy in British Columbia: 1965–1972. *Plan Canada*, 20(1), 19–38.
- Burnett, S. (2011, June 8). Economic growth strong in Northeast. *Dawson Creek Daily News*, p. A8.
- Di Milia, L., & Bowden, B. (2007). Unanticipated safety outcomes: Shiftwork and drive-in, drive-out workforce in Queensland's Bowen basin. *Asia Pacific Journal of Human Resources*, 45(1), 100–112. doi:10.1177/1038411107073607
- Fereday, J., & Muir-Cochran, E. (2006). Demonstrating rigour using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5(1), 1–11.
- Fowler, K., & Etchegary, H. (2008). Economic crisis and social capital: The story of two rural fishing communities. *Journal of Occupational and Organisational Psychology*, 81, 319–341. doi:10.1348/096317907X226972
- Glass, R., & Lazarovich, J. (1984). The government perspective. In *Mining communities: Hard lessons for the future* (pp. 63–76). Kingston, ON: Centre for Resource Studies, Queen's University.
- Gramling, R. (1995). *Oil in the Gulf: Past Development, Future Prospects* (OCS Study MMS 95-0031). Chauvin: Department of the Interior, Minerals Management Service, Gulf of Mexico OCS Region.
- Halseth, G., & Sullivan, L. (2002). *Building Community in an Instant Town: A social geography of Mackenzie and Tumbler Ridge, British Columbia*. Prince George: University of Northern British Columbia Press.
- Hanlon, N., Halseth, G., Clasby, R., & Pow, V. (2007). The place embeddedness of social care: Restructuring work and welfare in Mackenzie, BC. *Health and Place*, 13, 466–481. doi:10.1016/j.healthplace.2006.05.006
- Hanoa, R., Baste, V., Kooij, A., Sommervold, L., & Moen, B. (2011) No difference in self reported health among coalminers in two different shift schedules at Spitsbergen, Norway, a two years follow-up. *Industrial Health*, 49, 652–657. doi:10.2486/indhealth.MS1280
- Hayter, R. (2000). *Flexible crossroads: The restructuring of British Columbia's forest economy*. Vancouver: UBC Press.
- Hayter, R., & Barnes, T. (1990). Innis' staple theory, exports, and recession: British Columbia, 1981–1986. *Economic Geography*, 66, 156–173. doi:10.2307/143744

- Heisler, K., & Markey, S. (2013). Scales of benefit: Political leverage in the negotiation of corporate social responsibility in mineral exploration and mining in rural British Columbia, Canada. *Society and Natural Resources*, 26, 386–401. doi:10.1080/08941920.2012.695858
- Hiew, C. (1992). Separated by their work: Families with fathers living apart. *Environment and Behavior*, 24, 206–225. doi:10.1177/0013916592242004
- Hoekstra, G. (2010, April 24). Mine by them; local government, first nation back Mount Milligan. *Prince George Citizen*, p. 1.
- Houghton, D. (1993). Long distance commuting: A new approach to mining in Australia. *The Geographical Journal*, 159, 281–290. doi:10.2307/3451278
- House of Representatives Standing Committee on Regional Australia. (2013). *Cancer of the bush or salvation for our cities? Fly-in, fly-out and drive-in, drive-out workforce practices in regional Australia*. Canberra: Commonwealth of Australia.
- Humphreys, D. (2000). A business perspective on community relations in mining. *Resources Policy*, 26(3), 127–131. doi:10.1016/S0301-4207(00)00024-6
- Hutton, T. (2002). *British Columbia at the crossroads: New regional development pathways for the 21st century. A review of the literature on regional development processes, issues, and policy implications for BC*, Report prepared for Project 250: Regional economies expert panel. Vancouver: BC Progress Board.
- Innis, H. (1933). *Problems of staple production in Canada*. Toronto, ON: Ryerson Press.
- Kinnear, S., Kabir, Z., Mann, J., & Bricknell, L. (2013). The need to measure and manage the cumulative impacts of resource development on public health: An Australian perspective. In A. Rodriguez-Morales (Ed.), *Current topics in public health* (pp. 125–148). Rijeka: InTech.
- Krippendorff, K., & Bock, M. (Eds.). (2009). *The content analysis reader*. Thousand Oaks, CA: Sage.
- Kuyek, J., & Coumans, K. 2003. *No rock unturned: Revitalizing the economies of mining dependent communities*. Ottawa, ON: Mining Watch Canada.
- Marchak, P. (1983). *Green gold: The forest industry in British Columbia*. Vancouver: UBC Press.
- Markey, S., Halseth, G., & Manson, D. (2012). *Investing in place: Economic renewal in Northern British Columbia*. Vancouver: UBC Press.
- Markey, S., Storey, K., & Heisler, K. (2011). Fly-in/Fly-out resource development: Implications for community and regional development. In D. Carson, R. Rasmussen, P. C. Ensign, A. Taylor, & L. Huskey (Eds.), *Demography at the edge: Remote human populations in developed nations* (pp. 213–236). Farnham: Ashgate.
- McDonald, P., Mayes, R., & Pini, B. (2012). A spatially-oriented approach to the impact of the Ravensthorpe nickel mine closure in remote Australia. *Journal of Industrial Relations*, 54(1), 22–40. doi:10.1177/0022185611432382
- Morrice, J., Taylor, R., Clark, D., & McCann, K. (1985). Oil wives and intermittent husbands. *The British Journal of Psychiatry*, 147, 479–483. doi:10.1192/bjp.147.5.479
- Muller, R., Carter, A., & Williamson, A. (2008). Epidemiological diagnosis of occupational fatigue in a fly-in, fly-out operation in the mineral industry. *Annals of Occupational Hygiene*, 52(1), 1–10.
- Newhook, J., Neis, B., Jackson, L., Roseman, S., Romanow, P., & Vincent, C. (2011). Employment-related mobility and the health of workers, families, and communities: The Canadian context. *Labour/Le Travail*, 67, 121–156.
- Newton, P. (1986). Settlement options for resource development in Australia. In *Institute for Research on Public Policy, Towns, wheels, or wings for resource development?* (pp. 54–87).

- Selected conference papers from the 3–4 February 1986 conference, Vancouver, BC: Institute for Research on Public Policy (IRPP).
- Öhman, M., & Lindgren, U. (2003). Who is the long distance commuter? Patterns and driving forces in Sweden. *Cybergeo: European Journal of Geography*, 243, 1–33.
- Reed, P., Foley, K., Hatch, J., & Mutran, E. (2003). Recruitment of older African Americans for survey research: A process evaluation of the community and church-based strategy in the Durham Elders Project. *The Gerontologist*, 43(1), 52–61. doi:10.1093/geront/43.1.52
- Robinson, I. (1984). New resource towns on Canada's frontier: Selected contemporary issues. In D. Detomasi & J. Gartrell (Eds.), *Resource communities: A decade of disruption* (pp. 1–21). Boulder, CO: Westview Press.
- Robson, R. (1988, February 18–20). The decline of resource towns. Paper presented to the Canadian Urban and Housing Studies Conference, Institute of Urban Studies, University of Winnipeg, Winnipeg, MB.
- Ryser, L., Rajput, A., Halseth, G., Markey, S. (2012). Assessing the Scale of Long Distance Labour Commuting in Mackenzie, BC. Prince George: UNBC.
- Sandow, E. (2011). On the road: Social aspects of commuting long distances to work. Umeå: Department of Social and Economic Geography, Umeå University.
- Sandow, E., & Westin, K. (2010). The persevering commuter – Duration of long distance commuting. *Transportation Research A*, 44, 433–445.
- Shrimpton, M., & Storey, K. (1992). Fly-in mining and the future of the Canadian North. In M. Bray & A. Thomson (Eds.), *At the end of the shift: Mines and single-industry towns in Northern Ontario* (pp. 187–208). Toronto, ON: Dundurn Press Limited.
- Spies, M. (2006). Distance between home and workplace as a factor for job satisfaction in the North-West Russian oil industry. *Fennia*, 184(2), 133–149.
- Standing Committee on Regional Australia. (2013). *Cancer of the bush or salvation for our cities? Fly-in, fly-out and drive-in, drive-out workforce practices in regional Australia*. Canberra: House of Representatives, Standing Committee on Regional Australia, the Parliament of the Commonwealth of Australia.
- Statistics Canada. (2006). *Canadian Census*. Ottawa: Statistics Canada.
- Storey, K. (2001). Fly-in/fly-out and fly-over: Mining and regional development in Western Australia. *Australian Geographer*, 32(2), 133–148. doi:10.1080/00049180120066616
- Storey, K. (2009). The evolution of commute work in Canada and Australia. In G. Dzida, F. Stammler, G. Eilmsteiner-Saxinger, M. Pavlova, T. Vakhrusheva, Z. Borlakova, & M. Nourieva (Eds.), *Biography, shift-labour and socialization in a northern industrial city – the far north: Particularities of labour and human socialization* (pp. 23–32). Proceedings of the International Conference in Novy Urengoy, Russia, 4–6 December 2008. Retrieved from [http://articcentre.ulapland.fi/docs/NURbook\\_2ed\\_100421\\_final.pdf](http://articcentre.ulapland.fi/docs/NURbook_2ed_100421_final.pdf).
- Storey, K. (2010). Fly-in/fly-out: Implications for community sustainability. *Sustainability*, 2, 1161–1181. doi:10.3390/su2051161
- Taylor, A., Larson, S., Stoeckl, N., & Carson, D. (2011). The haves and have nots in Australia's tropical north – New perspectives on a persisting problem. *Geographical Research*, 49(1), 13–22. doi:10.1111/j.1745-5871.2010.00648.x
- Tonts, M. (2010). Labour market dynamics in resource dependent regions: An examination of the Western Australian Goldfields. *Geographical Research*, 48, 148–165. doi:10.1111/j.1745-5871.2009.00624.x

- Torkington, A., Larkins, S., & Gupta, T. (2011). The psychosocial impacts of fly-in, fly-out and drive-in, drive-out mining on mining employees: A qualitative study. *Australian Journal of Rural Health*, 19(3), 135–141. doi:10.1111/j.1440-1584.2011.01205.x
- Wagstaff, A., & Sigstad Lie, J. (2011). Shift and night work and long working hours: A systematic review of safety implications. *Scandinavian Journal of Work, Environment, and Health*, 37, 173–185.
- Wray, D. (2012). ‘Daddy lives at the airport’: The consequences of economically driven separation on family life in the post-industrial mining communities of Cape Breton. *Employee Responsibilities and Rights Journal*, 24, 147–158. doi:10.1007/s10672-012-9196-4