NO MAN'S LAND

deconstructing the company camp in Canada's Oil Sands

by
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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

ABSTRACT

For nearly fifty years, commercial development in the Canadian Oil Sands has been the generator of a population explosion in northern Alberta. Oil sector workers seeking stable employment and high wages have been drawn to the region for decades; often with the intention of re-settling permanently (or semi-permanently) in local communities near industrial activities. These population increases have long been the driver of urban (and sub-urban) development in Fort McMurray; which has grown to become a fully functioning industrial town of nearly 100 thousand permanent residents.

While many consider Fort McMurray a paragon of the contemporary 'single industry' (or company) town, an exclusive academic focus on 'city-building' has failed to acknowledge the increasing relevance of the company work camp in accommodating perpetual population increases. Indeed, statistical and demographic data – gathered by the Regional Municipality of Wood Buffalo – has revealed a trend prioritizing the deployment of company camps in lieu of permanent improvements to the existing urban construct.

Overwhelmingly, the camp has been characterized as the natural consequence of industrial expansion: as resource extraction operations advance farther into the Canadian hinterland, the centripetal urban model (i.e. Fort McMurray) is rendered increasingly obsolete. The expanding industrial footprint has necessitated an alternate (extra)urban project. This assumption - that the camp is inevitable - has severely limited the ongoing public discourse surrounding contemporary working accommodations, and has contributed to a perception of the camp as 'benign' or 'passive' when – in fact – the opposite is true.

This thesis aims to assess the current scope and scale of camp deployment through a careful accounting of individual accommodations sites while simultaneously exploring the organizational prerogatives of camp deployment. The camp – as extra-urban paradigm – is linked to an explicit economic agenda which has successfully institutionalized a 'nomadic,' 'transient,' or otherwise 'precarious' working regime on what is arguably Canada's most significant industrial project.

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00 | INTRODUCTION

What about work camps? How many logging, construction, cannery, mining, sawmill and railroad camps are/were there in different regions of Canada at different periods? How many men and women worked in them at any given time? How many in total worked in camps during some period of their lives? As yet there are no comprehensive studies which answer these questions. All that can be said is that camps and camp work have been central to all of the primary extractive industries in Canada.

– Rolf Knight, *Work Camps and Company Towns in Canada and the U.S.*

NO MAN'S LAND
FROM COMPANY TOWN TO WORK CAMP



Nearly forty years since the publication of *Work Camps and Company Towns in Canada and the U.S.*, the lingering questions which formed the basis of Knight's work (*see quotation, previous*) remain largely unanswered. Despite the assertion that camps have been critically important in the organization of *all* primary resource industries, the cross disciplinary historiography constructed around the production of *company housing* has prioritized a typological company – or 'single industry' – ***town***; an altogether more permanent settlement type characterized by an absolute subordination to company authority. While company camps have occasionally been included as an archetypal subset of the *company town* signifier, they are more often excluded from the socio-historical discourse altogether and are seldom engaged as the primary object of academic investigation.

This prioritization is troubling – particularly due to the prevalence of modern camps on contemporary work sites and their inherent contributions to the organization of migrant and precarious work – but not altogether unanticipated. The seemingly singular company camp is conceived in isolation; it positions a relatively small workforce on or near remote project sites and is deployed in immediate response to individual industrial demands. Inevitably, the camp fails to qualify as



a categorically *urban* object, or *settlement type*; at once too far remote to be considered the appendage of some larger urban assemblage, and yet not so extensive as to constitute an urbanism in and of itself. In addition, qualitatively similar individual camps – with their limited population sizes and definitive age and gender distributions – often preclude socio-historic assessment on the basis that they fail to assert the necessity of their documentation and analysis; the modern camp conveniently avoids the kinds of tangible crises (primarily, periods of intense employer/employee conflict) which would make critical investigation an imperative. Finally, the characteristic temporality of commercial or industrial camps, which appear and disappear in conjunction with the requirements of corporate enterprise, imply a certain difficulty in gathering the empirical and historical information necessary to construct a sociological investigation of camps and their inhabitants in the first place.

Moving forward, it is vital that these problematic qualities be re-evaluated as integral to corporate adaptations of the camp typology and are incorporated into a definition of capitalism's camp which rectifies its apparent conflation with the company town. Indeed, from the perspective of urban theory, the terms *town* and *camp* suggest an almost diametric opposition; and while both are subject to a similar hegemony (one established between the employer-landlord and the employee-tenant, which extends beyond the worksite and into the domestic sphere), these two appearances of the labour/capital power relation are unequivocally distinct. In the case of the company town, a sedentary construct is formed in the immediate vicinity of industrial operations which generally lasts for the complete duration of productive activities. The *town* accommodates a family unit, encourages permanent residence, and incorporates by design certain institutional functions necessary to attract and retain a significant

working population (including schools, recreation centres, places of worship etc.).[1] On the other hand the company *camp* is deployed as a distinctly transitory installation which positions concentrated work forces at highly specific project locations. The *camp* prioritizes migrant over resident labour, accommodates only the working individual and presupposes the existence of a home or home base *elsewhere* which fulfills the social, cultural and institutional obligations of an holistic *urban* assemblage. The opposition of these terms – *town* and *camp*, *sedentary* and *transitory*, and, *resident* and *migrant* – are fundamental in isolating the project of the company camp from that of the company town and are key to elaborating on exploitations unique to contemporary *camp space*.

This distinction (between *town* and *camp*) is of paramount importance, not only in constructing an historical record of company owned workforce accommodations, but in forming a critical analysis of capitalism's present day organizational techniques. The present camp model – which is as much a product of the modern movement's fascination with prefabrication and modularity as it is a functional reinterpretation of the military encampment or colonial outpost – prioritizes an altogether distinct spatial logic which operates primarily through **dispersion** (the geographic diffusion of working populations), **exclusion** (the removal of the family unit from worksite accommodations) and **atomization** (the isolation of the working individual both within and outside of the camp). These explicit spatial characteristics participate in an array of implicit sociological prerogatives: via *dispersion* a corporation's managerial position is strengthened by reconstituting the workforce as a set of

1 Marcelo J. Borges and Susana B. Torres, ed., *Company Towns: Labour, Space, and Power Relations across Time and Continents* (New York, NY: Palgrave MacMillan, 2012), 1-40.



fig. (0.02) **[previous]** Horizon North's 1,080 room 'Poplar Creek' & 'Birch Mountain' lodges (camp reference #32, see pg. 126), north of Fort McMurray, completed 2012.

fig. (0.03) **[above]** Shell's 2,460 room 'Albian Village' (camp reference #6, see pg. 110), east of Fort MacKay, completed 2007.

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more manageable groupings (in place of a unified whole); via *exclusion* the corporation is absolved of long term responsibilities to the working population, and thereby reduces (to an absolute minimum) social/cultural expenditures with respect to the maintenance and reproduction of the labouring class; and finally via *atomization* corporations inhibit their workforce's ability to self-organize, and therein suppress its capacity for confrontation (thereby preserving the *status quo*).

This subversive socio-spatial functionality is legible when the camp is conceived as an interconnected totality; a collection of 'like architectures' deployed systematically in service of a distinctly capitalist organizational agenda. As these implicit operations occurring within the industrial territory (vis-à-vis the modern camp) are brought to the fore, entrenched perceptions of the isolated (or individual) camp as *necessary* (given the current scale and rate of contemporary resource exploitation) or *inevitable* (given the increasing remoteness of various extraction sites) are opened to criticism.

These observations clarify the role of the architectural mechanism in the institutionalization of migrant work and suggest the extent to which industrial camps support imbalance within the labour-capital power relation. Through dispersion, exclusion and atomization, camps locate a more malleable working population which can efficiently and immediately be increased, decreased or re-allocated regardless of its geographic location. Simultaneously (via the normalization of a migrant working regime) the camp extends industry's search for labour beyond its prior local/regional constraints; as such, job competition is intensified while wages become regulated by an increasingly *global* labour pool. So considered, the current camp is not simply a receptacle for itinerant working individuals (some single point on a larger migratory spectrum)

but describes an architectural apparatus which *produces* the working nomad in place of a permanent resident. Today, the company town is metamorphosed into an urban structure tailor-made to support and facilitate the institutionalization of migrant work.

In no industrial territory is the emergence of the modern camp more apparent than amongst the collective projects of the Canadian Oil Sands, where as many as forty thousand migrant workers are currently dispersed throughout the northern half of the Province of Alberta. In the Municipality of Wood Buffalo alone (which contains the 'urban service area' of Fort McMurray, as well as the most active areas of the industrial territory), this figure represents a quantitative quadrupling of the camp population over the last decade; from just over 8 thousand migrant workers in 2002, to 39 thousand counted at the time of the 2012 Municipal Census.[2] Over the same period cumulative Oil Sands production increased from 32 million to 97 million cubic meters of petroleum product per year, while record high production volumes – totaling 104.5 million cubic meters – were recorded in 2013.[3] According to industry estimates this most recent figure is expected to double over the next decade, surpassing 235 million cubic meters (or ~1.5 billion barrels) annually by 2025.[4] These unprecedented production increases will require significant



2 *2012 Census: Project Accommodations Profile*, Regional Municipality of Wood Buffalo, 2012 (www.woodbuffalo.ab.ca/Municipal-Government/ Municipal-Archived-Census-Reports.htm), 109-112.

3 *Total Oil Sands Production Graph*, Alberta Energy Regulator: Oil Sands Information Portal, accessed May 7 2014 (www.environment.alberta.ca/apps/ OSIPDL/ Dataset/Details/46).

4 Based on 4.07 million barrels per day of production, see *Crude Oil: Forecast, Markets and Transportation*, Canadian Association of Petroleum Producers, June 2014,



workforce growth across the region, especially in the operations and construction sectors where the creation of 16 thousand jobs (operations)[5] and 20 thousand jobs (construction)[6] have been forecast over the same time period. Given the extensive trajectory of Oil Sands project sites and the nature of the jobs being created (that is, for location specific on-site work), it is prudent to assume that an overwhelming majority of these new workers will be housed in camps, which have become the *de facto* accommodations strategy for increasingly remote Oil Sands work. This near doubling of the camp population signals a dramatic transformation of the region's demographic composition, favouring the migrant (or fly-in/fly-out) worker while the established centrality of the present regional urbanism (i.e. Fort McMurray) becomes increasingly obsolete.

Canada's Oil Sands (or Tar Sands) constitute the third largest petroleum reserve on the planet (behind only the Saudi Arabian and Venezuelan reserves, respectively) and are estimated to contain as much as 1.8 trillion barrels of bitumen, of which 168 billion are considered recoverable given current extraction technologies.[7] Since 1967 (the advent of commercial Oil Sands production) approximately 7.4 billion barrels

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accessed Aug. 7 2014 (www.capp.ca/library/publications/crudeOilAndOilSands/pages/pubInfo.aspx?DocId=247759), 7.

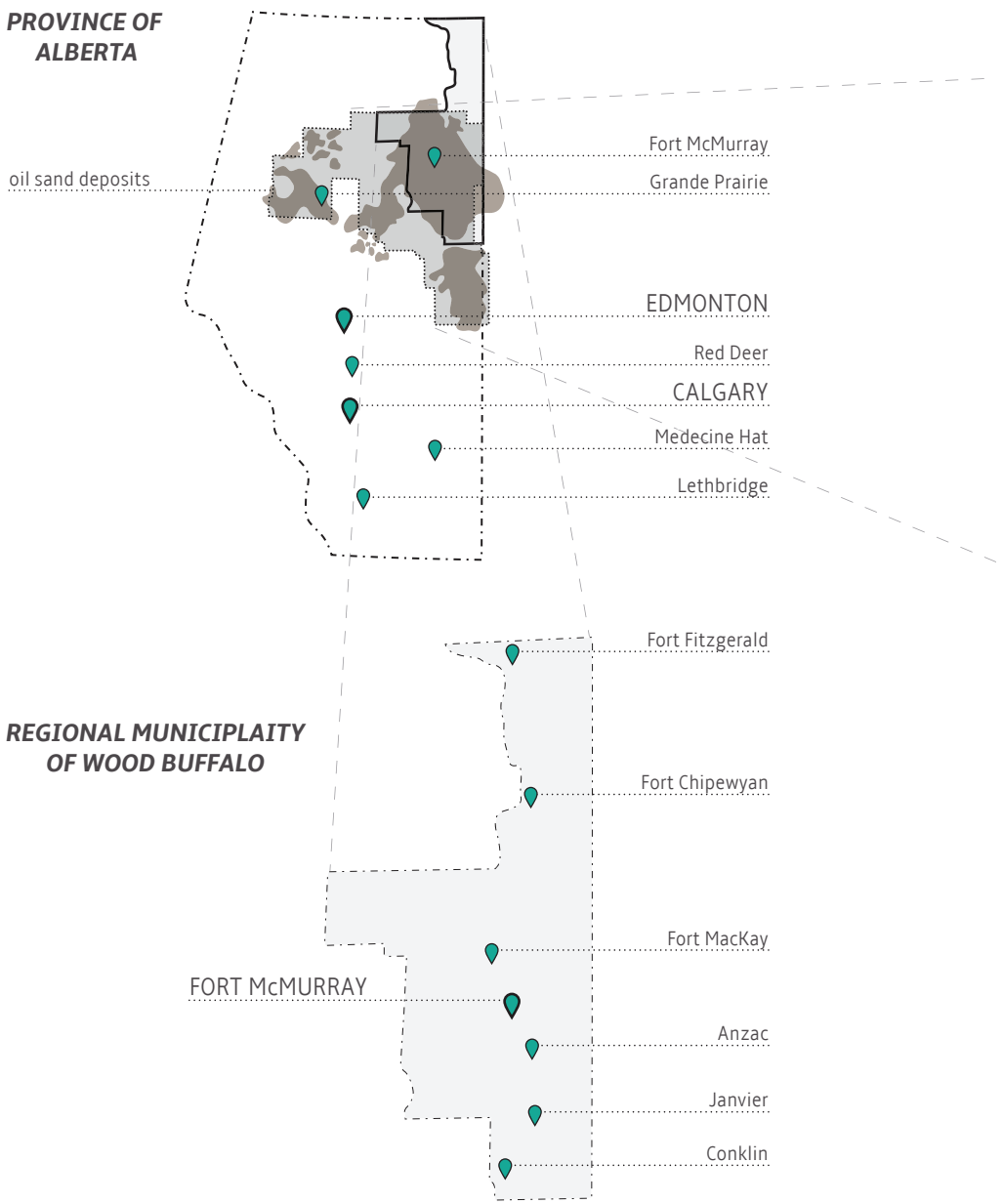
5 *The Decade Ahead: Oil Sands Labour Demand Outlook to 2022*, Petroleum Human Resources Council of Canada, Labour Market Information, accessed May 8 2014 (www.petrohrsc.ca/media/42582/oil_sands_labourdemandoutlook_to_2022_fact_sheet.pdf), 1.

6 *2014-2023 Key Highlights: Construction and Maintenance Looking Forward Alberta Oil Sands*, BuildForce Canada, accessed May 8 2014 (www.constructionforecasts.ca/sites/forecast/files/highlights/en/2014_AB_oil_sands_Constr_Maint_Looking Forward.pdf), 2.

7 *Alberta Oil Sands Industry Quarterly Update: Winter 2013*, Government of Alberta, accessed May 8 2014 (www.albertacanada.com/files/albertacanada/ AOSID_QuarterlyUpdate_Winter2013.pdf), 2.

of bitumen (or 4.5% of the recoverable reserve) have been extracted.[8] According to Alberta's Energy Regulator this activity describes an 'active footprint' of approximately 840 square kilometres[9] (an area ten times the size of Manhattan Island), and yet represents only a fraction (0.6%) of the total 140 thousand square kilometres which have been parcelled by the province for Oil Sands development. Of this total area (comprised of the Peace River, Athabasca and Cold Lake sub-regions) 66%, or 92 thousand square kilometers, are currently leased under the existing Oil Sands tenure system (see figure 0.05, right).[10] This suggests a massive dispersion of Oil Sands activity, which includes the collection of geologic and topographic data, exploratory drilling, site preparation, and other preliminary site work in addition to the operation and construction of the open-pit and in-situ extraction facilities which typify the region's industrial footprint. All of this work (present and future) is reliant on the ubiquitous deployment of work camps, which range in size and are constructed with varying degrees of intended permanence.

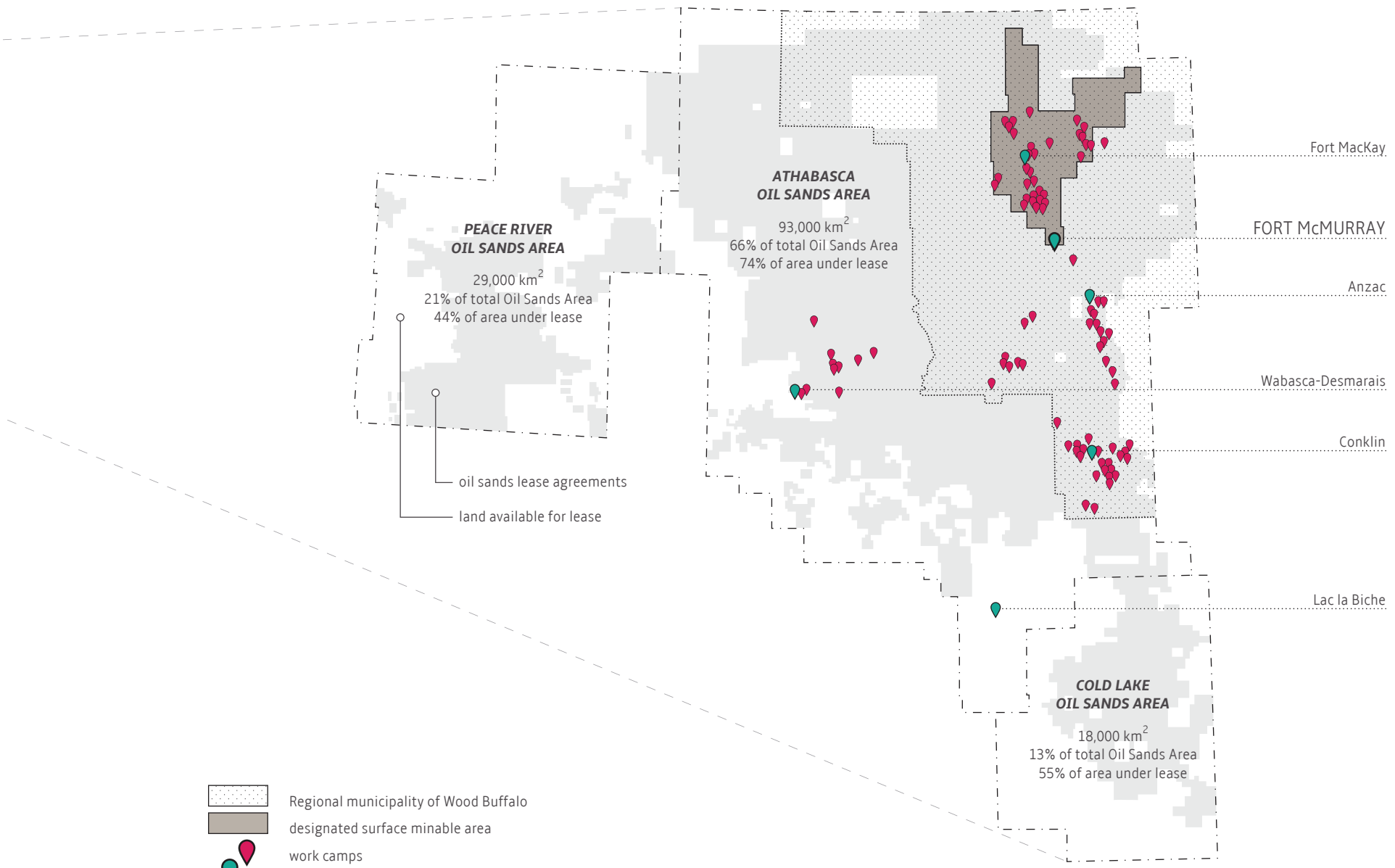
To date, no comprehensive mappings of work camp locations or their respective population sizes exist. What information *can* be gathered must be drawn from satellite imagery (which is, in and of itself, an unreliable method of data collection relative to the velocity of camp deployment) and supplimented with information from individual corporate websites and media packages. Only the Municipality of



8 *Total Oil Sands Production Graph*, Alberta Energy Regulator.

9 *Alberta's Clean Energy Future: Reclamation*, Government of Alberta, 2012, accessed May 8 2014 (www.oilsands.alberta.ca/reclamation.html).

10 *Alberta's Leased Oil Sands Area*, Resource Mapping & Analysis (JS), February 2014, accessed May 8 2014 (www.energy.gov.ab.ca/LandAccess/ pdfs/OSAagreeStats.pdf).


PEACE RIVER
OIL SANDS AREA
29,000 km2
21% of total Oil Sands Area
44% of area under lease
ATHABASCA
OIL SANDS AREA
93,000 km2
66% of total Oil Sands Area
74% of area under lease
COLD LAKE
OIL SANDS AREA
18,000 km2
13% of total Oil Sands Area
55% of area under lease
oil sands lease agreements
land available for lease
Fort MacKay
FORT McMURRAY
Anzac
Wabasca-Desmarais
Conklin
Lac la Biche
Regional municipality of Wood Buffalo
designated surface minable area
work camps
permanent communities

[1984]



[1996]



[2001]



[2011]



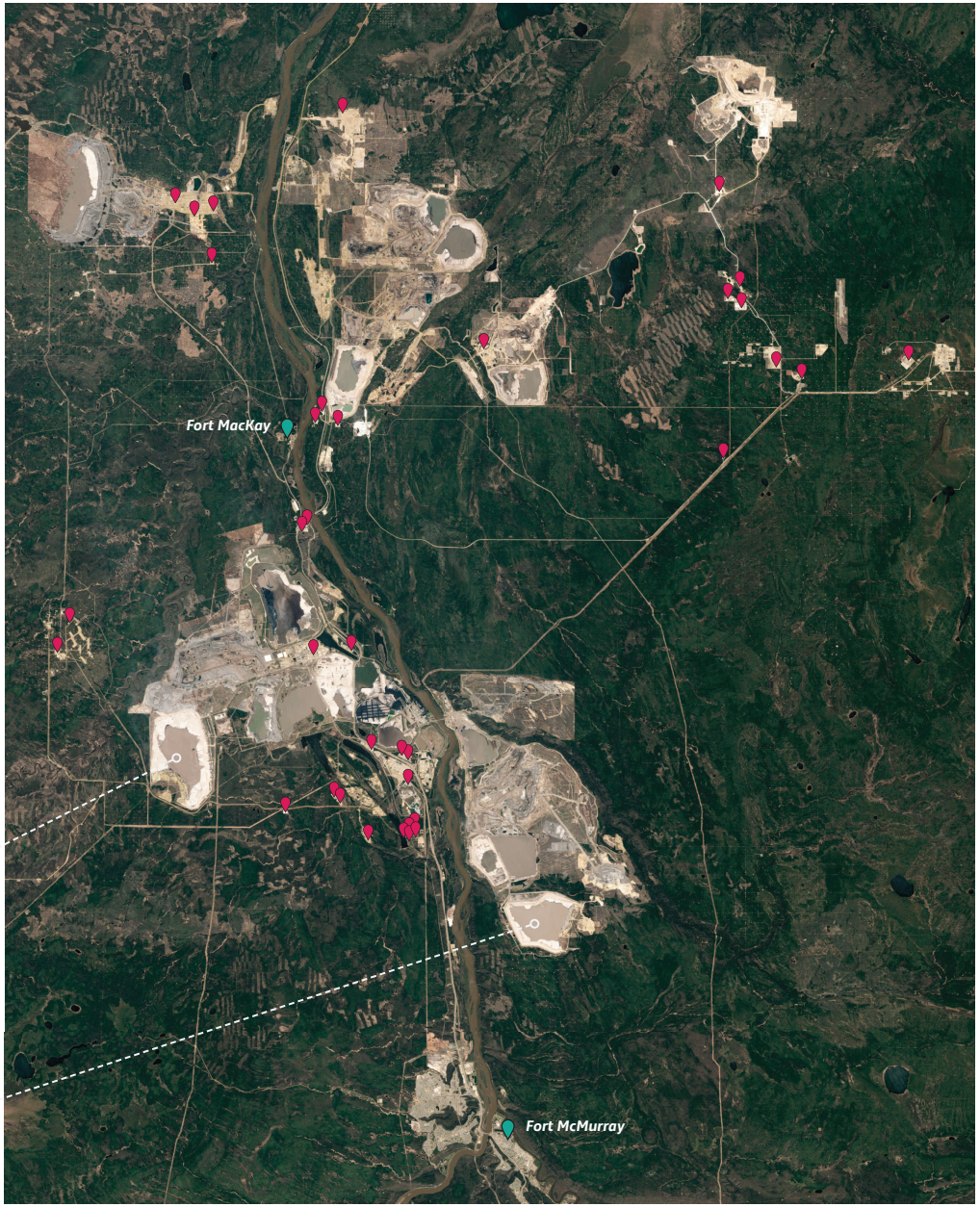


fig. (0.05) **[previous]** The Oil Sands industrial territory showing Provincial, Regional and Municipal scales. The mappings clarify relevant overlapping boundaries, and thus underscore limitations associated with describing the inhabitiation of the Oil Sands based only on municipal census information.

fig. (0.06) **[far left]** Time lapse satellite photographs of the Suncor and Syncrude project sites; 1984 - 2011.

fig. (0.07) **[left]** 2011 satellite photograph of the Oil Sands area north of Fort McMurray, with locations of camp facilities and pre-existing communities noted. For more detailed mapping and investigation see Chapter 3 beginning on pg. 100.

Wood Buffalo, whose planning department deals with the authorization of camp construction on a day-to-day basis, has begun documenting (demographically but not spatially) what it refers to as the 'shadow population' on the grounds that municipal services and regional infrastructures are overtaxed by an as yet undocumented segment of the local/regional demographic makeup. While Wood Buffalo's municipal boundary describes what is undoubtedly the most active area of the resource reserve (currently and historically), its footprint only accounts for a portion of the Athabasca sub-region; which is itself only a portion of the provincially designated Oil Sands development area (see figure 0.05, previous). This leaves a truly massive expanse of active Oil Sands territory unaccounted for, and remains a principal barrier to comprehensive studies of the region's camps and their inhabitants.

A number of key questions remain unaddressed. What of working populations cycling through the Peace River and Cold Lake sub-regions, especially as in-situ production technologies expand to rival the volumetric capacities of traditionally larger open pit mining projects? What can be said for exploratory projects (and their associated camps) emerging within the isolated interior of the Athabasca sub-region? How many migrant workers – in total – remain unaccounted for given the municipal limits imposed on the census study? All that can be said with certainty is that as land adjacent to Fort McMurray and other established communities becomes increasingly scarce (is leased to private landholders or is actively exploited), the emergence of larger, more permanent camps far beyond the municipality's jurisdiction and its associated services (i.e. emergency response, social work, health care, policing) is inevitable.

These future extensions of the greater Oil Sands project emphasize the coercive quality of industrial camps, which inevitably

emerge in areas where no viable inhabitation alternatives exist. As new projects are inaugurated on sites farther from the established urban service area, resident populations (once regarded as necessary to sustained industrial growth) are actively up-rooted; transformed into (or replaced by) transitory populations of migrant workers whose decidedly ephemeral presence in the region makes them difficult to quantify. This process of transformation is reinforced by – and operates through – the urban/architectural project of the camp, which not only necessitates migration but codifies a new domesticity around the prioritization of cyclical or rotational working schedules. The work camp, as a kind of surrogate company town, describes only half of a now distended domestic whole which has expanded to encompass the communities from which these workers must regularly travel.

That these crucial socio-spatial transformations have yet to be investigated vis-à-vis the operative architectures emerging to facilitate them demonstrates a failure to engage the camp as an organizational paradigm – one intrinsically tied to the present mode of industrial operation as well as to emergent ideologies regarding corporate citizenship and social responsibility. By approaching the subject of migrant labour from a strictly urban/architectural perspective, the following work aims to elaborate on the active role of the built environment in subversive/coercive manipulations of the working individual – particularly in the Canadian Oil Sands, where these transformations (from resident to migrant, from town to camp) are playing out in one of the most expansive and influential resource reserves on the planet.





01 | INHABITING THE TAR SANDS

All old established national industries have been destroyed or are daily being destroyed. They are dislodged by new industries . . . that no longer work up indigenous raw material but raw material drawn from the remotest zones; industries whose products are consumed, not only at home, but in everry quarter of the globe.

– Karl Marx & Fredrich Engels, *The Communist Manifesto*

PREAMBLE

Before engaging today's camp directly, as an industrial urbanism and organizational paradigm, it is important to frame the context – *geologic, geographic, economic* and *urban* – in which the mass deployment of company camps has become industrial praxis.

Of course, transient populations have resided in *camps* throughout the whole of human history; beginning with the ostensibly temporary shelters of the first nomadic societies and culminating in any number of contemporary iterations: whether *exploratory, militaristic, recreational, punitive,* or for the purposes of *foreign aid, disaster relief,* etc.[1] With this in mind, understanding the specific conditions which have made the construction of corporate work camps plausible – and in fact preferable to more durable domestic alternatives – is critical in isolating the fundamental purpose and primary function of capitalism's distinctive camp.

The following investigation of the emerging Oil Sands project seeks to illuminate the conditions – both *local* and *global* – which have factored into the way working populations are organized today.

1 Charlie Hailey, *Camps: A Guide to 21st Century Space* (Cambridge, MA: MIT Press, 2009).

DISCOVERY & EXPERIMENTATION
[1869 - 1947]

Despite nearly a century of anecdotal documentation (beginning with the eighteenth century journal entries of European explorers Peter Pond and Alexander MacKenzie),[2] the commercial development of Canada's Oil Sands began in the mid-nineteenth century as westward expansion became a national prerogative. Following the purchase of *'Rupert's Land'* from the Hudson's Bay Company in 1869, the Federal Government commissioned the *Geologic and Natural History Survey of Canada* (GSC) to conduct a protracted investigation into the resource potential of the MacKenzie River Basin;[3] an area of approximately 1.8 million square kilometres, spanning from northwestern Saskatchewan to British Columbia, and north, through the Yukon and Northwest Territories, to the Arctic Ocean. In 1888, GSC geologist Dr. Robert Bell summarized the Survey's key findings in a presentation to a select committee of the Canadian Senate, concluding;

> *The evidence submitted to your committee points to the existence in the Athabasca and MacKenzie Valleys of the most extensive petroleum field in America, if not the World. . . . it is probable that this great petroleum field will assume an enormous value in the near future . . .*[4]

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2 Paul Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto* (Calgary, AB: University of Calgary Press, 2004) 2.

3 Ibid.

4 Debra J. Davidson and Mike Gismondi, *Challenging Legitimacy at the Precipice of Energy Calamity* (New York, NY: Springer, 2011) 41.

Bell's testimony had an immediate effect. Over the next several decades private investors and public entities settled into Alberta's Athabasca region to explore for viable project sites, believing (as did the GSC) that the visible surface tar – seeping from the banks of the Athabasca River – was evidence of massive liquid petroleum reservoirs below.[5] By 1910, attempts to appropriate conventional drilling technologies for the commercial extraction of Athabasca oil had failed to produce any usable petroleum product and had widely discredited the conclusions of Bell and the GSC while severely affecting investor confidence in the value of the latent resource.[6]

As the speculative optimism associated with potential discoveries of 'free' or 'liquid' oil diminished, developmental energies shifted towards dealing directly with the raw oil sand. In 1915, the *Dominion Department of Mines* commissioned a mining engineer, Dr. Sidney Ells, to explore potential applications for the peculiar resource. Ells successfully employed the material paving walkways and road surfaces in Edmonton and Jasper, and would eventually send Athabasca asphalt for use as far as Ottawa.[7] At the same time, the *Alberta Research Council* assigned an Edmonton chemist, Dr. Karl Clark, to expand on Ells' body of work; believing that it might be possible to synthesize a commercial fuel product from the sediment laden tar.[8] Based on research conducted at the University of Alberta, Clark and his partner Sid Blair patented a hot-water process for the separation of *bitumen* (a semi-solid hydrocarbon) from oil sand in

fig. (1.02) **[right]** testing of experimental paving surfaces is conducted in Edmonton, AB under the direction of the Department of Mines

fig. (1.03) **[right]** early photograph of the International Bitumen Company project site on the banks of the Athabasca River

5 Chastko, *Developing Alberta's Oil Sands*, 2.

6 Ibid, 3.

7 Peter McKenzie-Brown et al., *The Great Oil Age: The Petroleum Industry in Canada* (Calgary, AB: Detselig Enterprises Ltd., 1993) 72.

8 Chastko, *Developing Alberta's Oil Sands*, 13.





1928 and, with the support of the Federal and Provincial Governments, the *Research Council* opened a pilot plant on the Clearwater River near Fort McMurray in 1929.[9]

The *International Bitumen Company* (IBC, founded in 1925 by R.C. Fitzsimmons) and *Abasand Oils* (founded in 1930 by Max Ball and D.O. Jones) were among the first Oil Sands producers to construct commercial operations facilities and adopt the distillation and 'upgrading' process coined by Clark and Blair.[10] By the early 1940's, both companies were mining in open pits on the banks of the Athabasca River and were successfully synthesizing small amounts of low grade diesel fuel.[11]

Progress notwithstanding, both *IBC* and *Abasand* struggled to find a viable market for their asphalt and petroleum products. Transport to and from the Athabasca region proved costly, while the tedious extraction, distillation and synthesization processes remained too expensive to generate any significant returns. For *Abasand*, a series of ownership transitions and sequential plant fires culminated with the appropriation of the facility by the Canadian Government under the War Measures Act in 1943;[12] while *IBC*'s operation at Bitmount struggled to secure development capital and was eventually closed.[13] By the end of the Second World War, discoveries of conventional oil reserves in Leduc shifted the industrial focus away from Athabasca and brought the first phase of Oil Sands development to a definitive close.

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9 Dan Barnes, "Profile: Karl Clark, the scientist," *The Edmonton Journal*, January 7, 2014, edmontonjournal.com/business/Profile+Karl+Clark+scientist/9123303/story.html.

10 McKenzie-Brown et al., *The Great Oil Age*, 73.

11 Ibid.

12 Ibid.

13 Chastko, *Developing Alberta's Oil Sands*, 37.

Despite the obvious commercial failures, these early projects were instrumental in prototyping the various production techniques which would later be adopted by large-scale industrial operations in the region. The discovery of a chemical process for separating a synthetic fuel from oil sand – along with advances in mining methodology, plant construction, and, of course, the detailed explorations and mappings of the resource territory which took place in the first half of the twentieth century – transformed the peculiar geologic formation into a viable (if not economically stable) industrial project.



PEAK OIL & POLITICIZATION
[1947 - 1967]

In the immediate post-War period, the notion of national defence became inexorably linked to the production of fossil fuels in the western world. For the United States, hostile relations with the Soviet Union and fears of another period of wartime oil consumption had the twofold effect of initiating domestic conservation policies and increasing national dependence on foreign reserves.[14] In *Strategic Geography and the Changing Middle East*, Geoffrey Kemp asserts:



14 Geoffrey Kemp and Robert E. Harkavy, *Strategic Geography and the Changing Middle East* (Washington, D.C.: Brookings Institution Press, 1997) 48.

The World War II experience left U.S. military professionals extremely pessimistic about America's ability to 'oil' another protracted war. The assumptions were that a war with the Soviet Union could last three to four years, that the few atomic weapons in the U.S. arsenal would not be decisive, and that the United States did not have enough oil reserves to fight a war lasting more than a year or two. War plans thus placed great emphasis upon the need for the West to secure the Middle East oilfields early in the conflict.[15]

Of course, the geopolitical fragility associated with Middle Eastern oil resources began to materialize throughout the 1950's; first with the Iranian nationalization of the *Anglo-Iranian Oil Company* in 1951, and again in 1956 with the Egyptian nationalization of the Suez Canal. As Cold War politics became intricately tied to petrochemical geographies, a new era of domestic exploration and development was motivated by the impending international conflict.

On March 8th, 1956 (just months before the precipitation of the Suez Crisis), Shell geoscientist M. King Hubbert presented his paper *'Nuclear Energy and the Fossil Fuels'* at the Houston meeting of the *American Petroleum Institute* (API). After conducting an exhaustive study of fossil fuel production in the United States, Hubbert concluded that the longevity of any finite resource can be accurately predicted using a standardized mathematical model. Extrapolating from the data he collected, Hubbert theorized that – following an initial discovery – the *rate* of resource extraction increases *exponentially* as new reserves are discovered and

fig. (1.04) **[left]** Employee's leaving the Abasand site; in the background, some of the first commercial bunkhouses to be constructed in the Oil Sands.

fig. (1.05) **[left]** The Abasand plant site, circa 1936.

15 Ibid.

exploited, and technologies naturally develop as a means of expediting the extraction process. Due to the finite nature of fossil fuels (and other natural resources) this exponential production is bound to peak, and eventually decline, as fewer new reserves are uncovered and existing sources are depleted.

Hubbert's mathematical extrapolation was fairly simple (see figure 1.07, top right). On a graph plotting time in relation to rates of resource extraction, the rate of extraction of any finite resource must necessarily begin and end with no production at all; where $\{t = 0\}$ indicates the moment before the initial discovery of a resource, and $\{t = \infty\}$ signifies the moment of a resources complete exhaustion. By collecting extraction data from a variety of resource industries, Hubbert observed that production rates tended to undergo periods of doubling before reaching an eventual plateau and subsequent decrease. The derivative of this data set would yield a finite quantity of resource extracted, and the methodology can therefore be inverted (using geological surveys and estimated quantities of reserve resources) to roughly determine the shape of the curve and thereby predict the approximate moment of peak production. By applying his 'peak model' to the most accurate geological surveys of the time, Hubbert predicted (with startling accuracy) that the American energy industry could expect to reach the moment of ***peak oil production*** between 1965 and 1970 (see figure 1.08, middle right), after which point the nationwide production of petrochemical resources would begin its terminal decline.

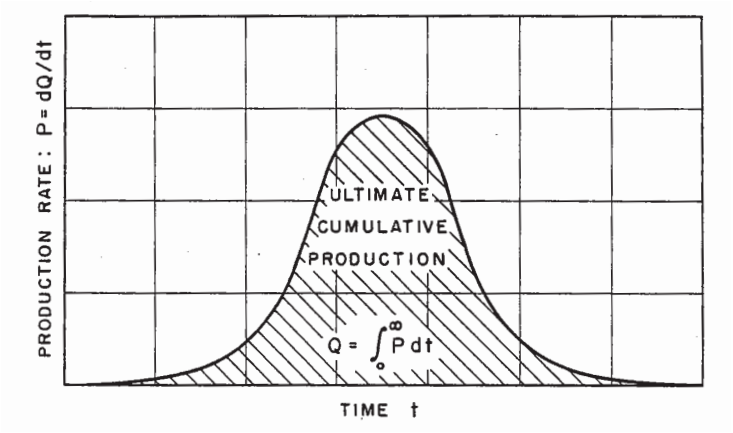
For Hubbert, the immanent peak was unquestionably tied to the notion of energy crisis;

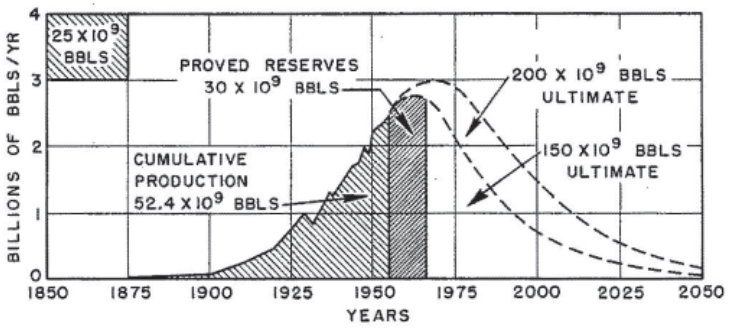
. . . it does pose as a national problem of primary importance, the

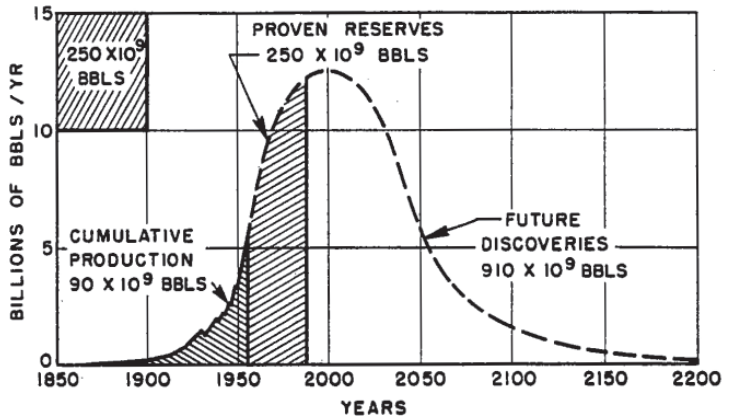
fig. (1.06) **[right]** M.King Hubbert, *Nuclear Energy and the Fossil Fuels;* "Mathematical relations involved in the complete cycle of production of any exhaustible resource."

fig. (1.07) **[right]** M. King Hubbert, *Nuclear Energy and the Fossil Fuels;* "Ultimate United States crude-oil production based on assumed initial reserves of 150 and 200 billion barrels."

fig. (1.08) **[right]** M. King Hubbert, *Nuclear Energy and the Fossil Fuels;* "Ultimate world crude-oil production based upon initial reserves of 1,250 billion barrels."







> *necessity, both with regard to requirements for domestic purposes and those for national defense, of gradually having to compensate for an increasing disparity between the nation's demands for these fuels and its ability to produce them from naturally occurring accumulations of petroleum and natural gas.*[16]

Hubbert was the first to ascribe a concrete temporality to the finite nature of energy resources in North America. His work identified what he believed to be an inevitable energy crisis – one accelerated by a growing societal dependence on definitively exhaustible resources – and advocated for an industrial reorientation towards alternative sources of energy. While his presentation to the API (and subsequent publication) were intended to point towards emerging nuclear technologies as the solution to increasing energy demands, the research had the added effect of re-igniting industrial interest in the mobilization of unconventional hydrocarbon resources like oil sand and shale gas (the extraction and monetization of which Hubbert's audience was far better equipped to perform).

Hubbert's predictions – that the moment of U.S. *Peak Oil* would occur within the next decade, followed by a global peak some time in the early 21st century (figure 1.09, bottom left) – scientifically established the urgency with which the globe's proven oil reserves have been pursued for the last sixty years; chief among them Alberta's Oil Sands, which were (at the time of Hubbert's conjecture) already the product of seventy-five years' worth of experimentation and development.

16 M. King Hubbert, "Nuclear Energy and the Fossil Fuels" (paper presented at the spring meeting of the American Petroleum Institute, San Antonio, Texas, March 7-9, 1956).

While Hubbert may have been the first to publicize the depletion of American oil reserves, forward looking oil companies had begun to react to the trends highlighted within *Peak Theory* long before its initial publication.

Throughout the 1950's, the Pittsburgh based *Sun Oil Company* – at the suggestion of chairman J. Howard Pew, and under the direction of George Dunlap, manager of *Sun*'s Canadian operations – began a strategic re-positioning within the Athabasca Oil Sands by quietly purchasing some of the most valuable leases north of Fort McMurray. In the mid 1940s, *Sun*'s planning group had conducted a futures study – not dissimilar to those which would lead to Hubbert's '*Peak Theory*' – concluding that decreasing oil supplies and increasing demand would reach a critical point some time in the mid 1960s.[17] The group identified three unconventional fuel sources as possibilities for the company's future diversification plans: oil shale, bituminous sands, and coal liquefaction.[18] For Pew, who reportedly *"displayed an uncanny knack for anticipating changes in the business environment and positioning his company to meet them*", the Athabasca Oil Sands were a 'passion project' which had captivated his interest since before the Second World War.[19]

In 1958 (two years after the publication of *Peak Theory*), *Sun Oil* finalized a deal with *Great Canadian Oil Sands Ltd.* (one of the few remaining production facilities struggling to maintain financially viable operations in the Athabasca region) in which *Sun* would contribute financially to the expansion of the GCOS facility in return for 75% of the



17 Chastko, *Developing Alberta's Oil Sands*, 104.

18 Ibid.

19 Ibid, 105.



company's output (pre-purchased at a contracted price).[20] The partnership would be the final step in securing the Provincial Government's approval for the construction of a full scale operations facility – capable of producing over 30,000 barrels of oil per day (*bpd*) – and finally initiating the commercial production of Alberta oil sand. After a series of financial setbacks (remedied largely by further capital investment from *Sun Oil,* who later assumed a controlling interest in *GCOS Ltd.*) the Alberta Government granted the Sun/GCOS partnership construction approval in 1962, and in the following year construction activities on a revised 45,000 *bpd* facility began.

At its maximum, the project employed just over 2,500 workers, comprised mostly of specialized tradespeople who cycled through the region temporarily as the work progressed.[21] Federal census data collected in 1961 suggests that during same period, the population of Fort McMurray was only about 1,200;[22] less than half the population of workers at the company's busiest. By 1968, the local resident population had grown to approximately 6,000 as a result of renewed interest in the Oil Sands endeavour.[23]

The GCOS plant was completed in 1967, and would serve as the precedent for all future operations in the region. At the plant opening, Pew spoke enthusiastically about the realization of his company's vision:

No nation can long be secure in this atomic age unless it be amply

20 Ibid, 106.

21 "Capital of the Tar Sands," *Alberta's Real Estate Heritage*, 2008, (www.albertsource.ca/realestate/regions/fortmac/tarsands.html).

22 Ibid.

23 Ibid.

supplied with petroleum. . . . it is the considered opinion of our group that if the North American continent is to produce the oil to meet its requirements in the years ahead, oil from the Athabasca area must of necessity play an important role.[24]

Undoubtedly the publication of *Peak Theory* and the simultaneous escalations of Cold War conflict were major influences on Pew, who regarded *Sun Oil*'s investment in the Oil Sands as being integral to the future of his company as well as to the energy security of the continent. Pew's comments make clear the notional connections between the overarching threat of a global energy crisis (and the role of oil resources with respect to national security) and the decision to mobilize commercial operations in Canada's Oil Sands.

It is important to note here that, despite the advent of commercial production in 1967, the costs associated with the extraction and sale of Oil Sands bitumen remained uneconomical. *Sun Oil* maintained ownership of the GCOS plant until the formation of the Canadian subsidiary *Suncor Inc.* in 1979 and – through the sale of Athabasca bitumen to *Sun*'s affiliates in the southern United States – managed to cover its operating expenses before the price of oil soared in the mid-to-late seventies.[25] That Oil Sands production remained too costly to provide any significant economic benefit to investors speaks to the role of the global context in the mobilization of the Alberta deposit. The publication of *Peak Theory*, the construction of the *Great Canadian Oil Sands* facility, and the massive capital investment made by *Sun Oil*, thus coincide with an important transition in the global perception regarding unconventional fossil fuels:

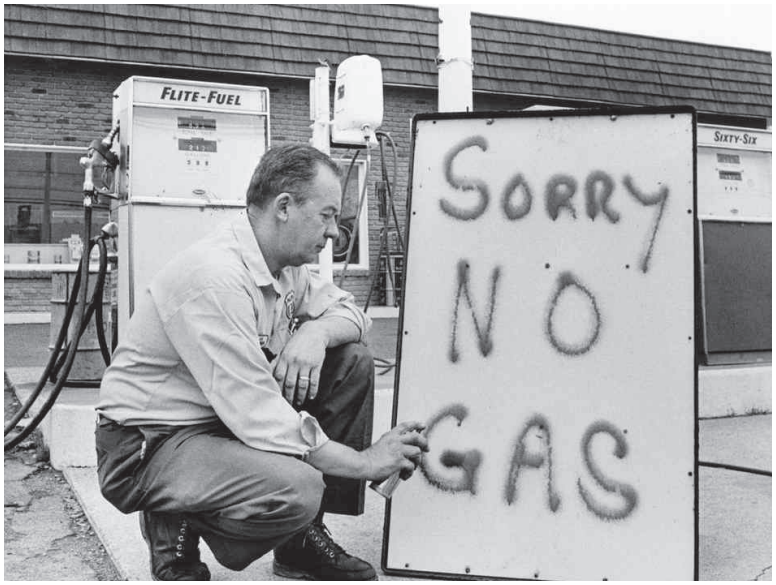
24 McKenzie-Brown et al., *The Great Oil Age*, 75.

25 Ibid.

fig. (1.09) **[previous]** End of shift at the Great Canadian Oil Sands project site, circa 1967.

fig. (1.10) **[right]** The global energy crises of the 1970s caused gasoline shortages throughout North America, causing local pump stations to advocate for conservation and/or close.

fig. (1.11) **[right]** Vehicles line-up for gasoline as prices began to rise in the early 70s.





what were previously considered an absolute economic impossibility, are today a strategic economic necessity.

CRISIS, RECESSION, RECOVERY
[1967 - 2000]

Throughout the 1970s and 80s, Oil Sands development oscillated viciously between periods of feverish expansion and complete stagnation. The successive 'oil shocks' of the 1970s – in which oil prices skyrocketed in response to both political posturing by the Arabic member states of OPEC (the *Organization of the Petroleum Exporting Countries*) in 1973 and during the Iranian revolution in 1978 – reinforced global anxieties over a growing dependence on foreign sources of oil, and briefly opened a window of opportunity for further Oil Sands development. Between 1972 and 1978, the price of oil rose from $3.50 to $34.00 (US) per barrel,[26] surpassing – for the first time since the advent of commercial production – the average $30.00 per barrel cost[27] to produce synthetic oil from the Tar Sands. Towards the end of the decade, the province was fielding new project proposals for facilities with two and three times the daily production capacity of *Great Canadian Oil Sands.*[28] However, despite the 'improving' market for synthetic oils, the initial capital costs associated with the construction of new extraction projects rose in conjunction with

26 Chastko, *Developing Alberta's Oil Sands*, 147,167.

27 Ibid, 216.

28 Ibid, 168.

the escalating economic crisis.

In 1969, the provincial government had approved the construction of a second commercial Oil Sands operation: *Syncrude*'s 100,000 bpd *Mildred Lake* project. By 1973, *Syncrude*'s estimated project costs had more than doubled as the result of rapid inflation, and investors began to withdraw financial support from the now partially completed facility.[29] With the threat of collapse looming large in the public eye, the Federal and Provincial Governments partnered with *Syncrude*; assuming a 30% interest in the endeavour and ensuring its completion in 1978 – nearly a decade after construction had begun.[30] In comparison to GCOS, which had cost approximately $7,800 *per daily barrel of production capacity* to construct, *Mildred Lake* had cost $20,000 *per daily barrel* by the time of its completion; more than double the initial *per barrel* capital cost J. Howard Pew and *Sun Oil* had been required to invest little more than a decade earlier.[31] By the time construction on *Syncrude*'s facility was completed, prospective startup costs had doubled again; causing two major project proposals (*Alsands* and *OSLO*) to be suspended as project finances were re-evaluated.[32]

While, on the one hand, inflated OPEC prices were good for the Canadian energy sector (in general) and for the mobilization of the Oil Sands resource (in particular), the rest of the country struggled to cope with the financial impacts of the mounting global crisis. The federal response was decisive:

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29 McKenzie-Brown et al., *The Great Oil Age*, 76.

30 Ibid.

31 Chastko, *Developing Alberta's Oil Sands*, 169.

32 Ibid.

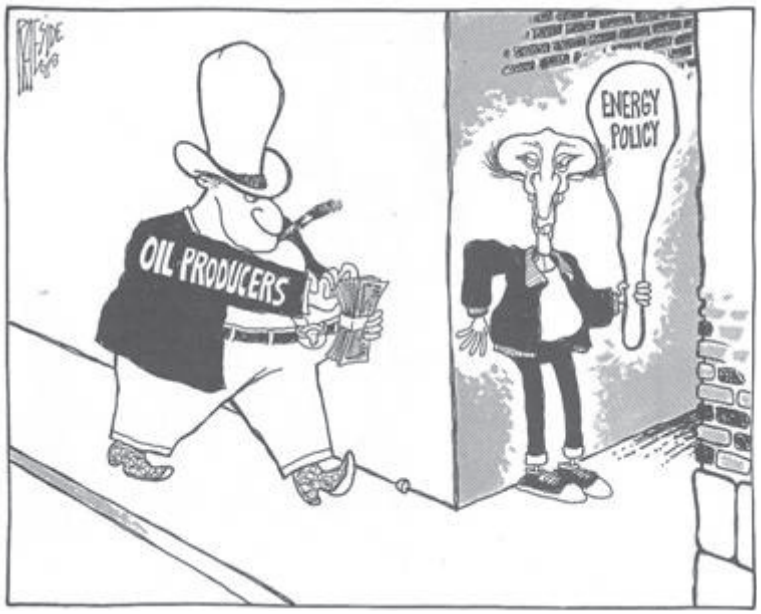


fig. (1.12) **[above]** A satirical cartoon captures the divisive nature of the NEP; Prime Minister Trudeau is depicted ready to ambush wealthy oil producers with the Liberal Party's national energy policy.

> *Higher world crude prices meant that synthetic fuel projects were profitable in more North American markets. On the other hand, the more profitable synthetic fuel projects became, the more likely they would become targets for government regulation. The federal government began to embrace a much more vigorous nationalism as its touchstone.*[33]

In 1980, the majority Liberal Government in Ottawa unveiled the *National Energy Program* (NEP), which brought the Canadian energy sector under Federal regulation in an effort to insulate Canadians (and Canadian manufacturing) from inflated world energy prices. Under the new energy program Oil Sands producers would be forced to sell synthetic crude at a 'made-in-Canada' price, ostensibly nullifying the economic gains afforded developers by the volatile petro-political context.[34] Prospective developers quickly abandoned the Oil Sands, and international investment capital evaporated.[35]

Moreover, oil prices began to plummet in 1981. In something of an ironic turn, the global panic over potential oil shortages during the crisis had produced an oversaturated oil market: industrialized nations had been forced to adopt "*radically new measures*" to conserve energy, thereby improving their overall energy efficiency and reducing the global demand for oil resources; while non-OPEC producing countries had begun to export their crude production in a last ditch effort to capitalize on the global market context.[36]

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33 Ibid, 135.

34 Ibid, 181.

35 Ibid, 186-187.

36 Geoffrey Kemp, *Strategic Geography and the Changing Middle East,* 61-62.

As world oil prices fell (once again) below the production costs associated with synthetic fuels, the Oil Sands project was dealt another significant blow. In July 1981, *Imperial Oil* announced that it would be suspending its proposal for a 135,000 bpd in-situ operation near Cold Lake, Alberta.[37] *Syncrude* followed suit by cancelling plans to expand its *Mildred Lake* facility.[38] The *Alsands* proposal (with *Shell* as its primary stakeholder) "collapsed" in 1982 despite concerted attempts by both the Federal and Provincial Governments to intervene.[39] The changing economic climate (as industrialized nations around the globe slid into a lasting recession) combined with the financial effects of the NEP (which had separated Canadian energy pricing from OPEC) crippled Oil Sands production; which was (and is) fundamentally dependant on the world price. Global and national crises notwithstanding, it was becoming clear that synthetic producers were entangled within what Peter Foster has termed the 'OPEC paradox':

> *To the extent that these* [synthetic oil] *projects are developed, and Canada, and other countries, succeed in weaning themselves away from OPEC oil, then OPEC oil will be in increasing surplus and its price will drop. This in turn will make synthetic oil and frontier projects uneconomic. To the extent that these projects are* not *developed, then OPEC oil will be in increasing shortage and its price will rise. This in turn will make the synthetic oil and frontier projects economically attractive.*[40]

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37 Chastko, *Developing Alberta's Oil Sands*, 191.

38 Ibid.

39 Ibid.

40 Peter Foster, *Sorcerer's Apprentices: Canada's Super-Bureaucrats and the Energy*

According to David Harvey, these kinds of *Catch-22* or contradictory relations are endemic to capitalism, and reveal crucial inadequacies inherent to production processes under Fordism and Keynesianism, which he describes as being characteristically 'rigid' – with respect to long-term capital investments, labour markets and state expenditures – and therefore limited in responding to unstable market conditions.[41] As the project of Canada's Oil Sands struggled, in its own right, with the rigidities of synthetic production and Keynesian economic policy, evidence of a global transition towards *"an entirely new regime of accumulation"*[42] was becoming increasingly apparent. Harvey describes the post-crisis context of the early 1980s as *"a period of rationalization, restructuring, and intensification of labour control"* as corporations struggled to cope with instability in the world's financial markets.[43] At precisely this moment the Fordist/Keynesianist model of accumulation is superseded by a more *flexible* mode of production. Harvey elaborates:

> ***Flexible Accumulation**, as I shall tentatively call it, is marked by a direct confrontation with the rigidities of Fordism. It rests on flexibility with respect to labour processes, labour markets, products and patterns of consumption. It is characterized by the emergence of entirely new sectors of production, new ways of providing financial services, new markets, and, above all, greatly intensified rates of commercial, technological, and organizational*

Mess (Toronto, ON: HarperCollins, 1982) 192.

41 David Harvey, *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Exchange* (Oxford, England: Basil Blackwell, 1990) 142.

42 Ibid.

43 Ibid, 145.

> *innovation. It has entrained rapid shifts in the patterning of uneven development, both between sectors and between geographical regions, giving rise* [] *to entirely new industrial ensembles in hitherto undeveloped regions. . . . It has also entailed a new round of what I shall call 'time-space compression'* [] *in the capitalist world – the time horizons of both public and private decision-making have shrunk, while satellite communication and declining transport costs have made it increasingly possible to spread those decisions immediately over an ever wider and variegated space.*[44]

While Harvey's sweeping theorization is intended to capture an ostensibly global shift occurring within the capitalist world, *flexibility* began to emerge as a governing concept within and surrounding the project of Canada's Oil Sands as both corporations and governments worked to stabilize operations throughout the recession.

By the mid 80s, both *Suncor* and *Syncrude* had begun a lengthy conversion process which saw the traditional draglines and bucketwheel excavators exchanged for a more mobile fleet of conventional trucks and shovels (see figures 1.14 and 1.15, right). While the massively efficient bucketwheel and dragline technologies had played a significant role in the early economization of Oil Sands extraction, they remained hugely expensive (between 50 and 100 million dollars per machine)[45] and were largely immobile (due to their reliance on an expansive system of fixed conveyor belts required for the transport of mined material to central





44 David Harvey, *The Condition of Postmodernity*, 147.

45 "Canada's Oil Sands Shifting to Second Generation Reclaimation, Mammoth Machines Being Retired," *Oil and Gas Online*, Aug. 10, 1999 (www.oilandgasonline.com/doc/canadas-oil-sands-shift ing-to-second-generati-0001#drag).

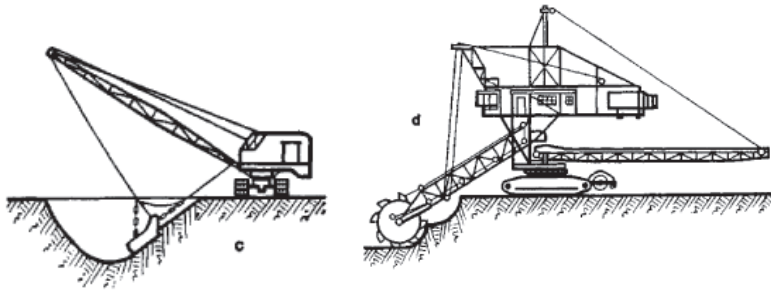


fig. (1.13) **[left & above]** A bucketwheel excavator shown in situ. According to industry resources, Syncrude's combined dragline-bucketwheel system cost 110 million dollars, required a standard operations crew of six individuals (three for each machine), and was capable of excavating 6,150 tons of overburden per hour (see note 45).

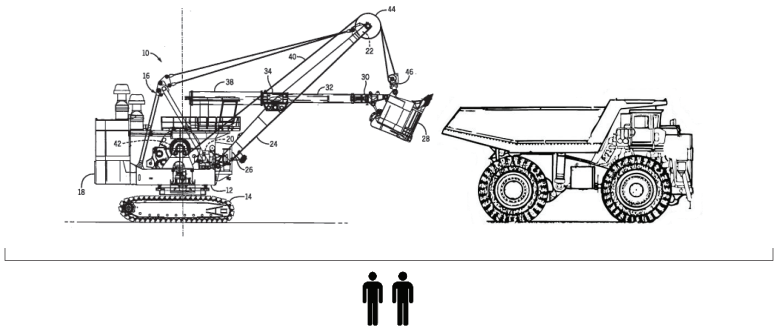


fig. (1.14) **[left & above]** Truck-and-shovel mining in the oil sands. The image to the left depicts at least four trucks paired with a single cable shovel. For any given extraction operation the required number of trucks varies depending on a number of factors including shovel rate and effciency, the ratio of shovel size to truck carrying capacity and the distance from extraction site to processing facility (meaning, of course, that the number of workers employed 'per unit quantity' of oil sand extracted varies with each operation).

processing facilities). Re-configuration of the system within the deposit had proven to be a lengthy (and costly) process, and would require perpetual reinvestment in lengths of conveyor as the size of active mines continued to grow. In addition, routine and unscheduled maintenance had regularly caused extended interruptions in production (since the entire production process was ultimately reliant on the continuous functionality of a single machine). In comparison, the standardized four-ton trucks and cable shovels (which continue to be used in open pit mines today) could be acquired at a fraction of the cost (approximately 6 million dollars per truck and between 10 and 15 million per shovel),[46] were mobile (and thus *selective* in their ability to target the most profitable areas of the reserve), and ultimately scalable (a number of machines could be *added to* or *removed from* circulation – in order to increase or scale back production – in response to a variety of external factors, including turbulent market conditions). This decidedly simple set of transformations is precisely the kind of 'radical restructuring' which Harvey observes in the aftermath of the economic crises of the 1970s.

Of course, as Harvey suggests, the transition towards a more *flexible* mode of production demands a corresponding *'flexibility'* with respect to working populations. In the Oil Sands, the adoption of 'truck-and-shovel' extraction (as an exercise in flexibility) implies the simultaneous adoption of precarious working arrangements; since, just as machinery can be removed from (or added to) the active extraction process, the population of day-to-day operations workers must be capable of immediate fluctuation in conjunction with desired production outputs.

46 *Facts about Alberta's oil sands and its industry*, Oil Sands Discovery Centre, accessed August 2014 (www.history.alberta.ca/oilsands/resources/resources.aspx) 17.

This problem becomes more significant as the regional working population increases and the Oil Sands project grows to accommodate a multitude of corporate entities operating within the same niche market space; since market fluctuations – and thus cutbacks and layoffs – are guaranteed to have sweeping regional consequences. The fragile market for synthetic oils (and the perpetual uncertainty regarding the economics of production as articulated by Foster) thus translates directly into experimentation with the working contract, and ultimately into new forms of workforce organization which undermine 'job security' in favour of greater overall elasticity.

These factors reveal precisely ***how*** the concept of *'camp'* (as architectural object) or *'camping'* (as activity) – both of which allude to a temporary shelter or settlement and thus to a transient or mobile population – emerges, in the post-crisis scenario of the 1990s, as crucial to the institutionalization of flexible working arrangements; particularly on peripheral industrial sites where corporations exercise autonomous control over the construction and organization of workforce accommodations. This connection – between the advent of flexibility (as a governing logic within capitalism) and the adoption of the company work camp (as a ubiquitous organizational strategy) – will be explored in greater detail in the following section.

While revised extraction methodologies were a major contributor to the post-crisis economics of project operation (reducing the average production cost *per barrel of synthetic crude* from $30 in 1985 to $14 in 1995),[47] the Oil Sands, as a whole, relied heavily on neo-liberal revisions

47 Chastko, *Developing Alberta's Oil Sands*, 191.

to restrictive public policies in order to truly recover from the recession.

In 1985, the Mulroney Government dismantled the NEP; deregulating the Canadian energy sector and allowing for the sale of synthetic petroleum products at world market value. The Federal Government hoped to attract the international investment dollars which had been alienated by the policy in 1980 (and thereby re-energize the developmental urgency associated with the production of synthetic fuels) and establish an economic context which would foster technological experimentation (and therein mobilize a much larger portion of the resource reserve).

The same year, *Imperial Oil* re-tabled its Cold Lake proposal – which would employ experimental *in-situ* recovery technologies for the first time commercially – and was granted construction approval. Rather than construct the 135,000 bpd 'megaproject' all at once, *Imperial* adopted a "*modular approach*" whereby the company would *"let economic conditions dictate the construction schedule for the project's additional phases."*[48] This suggests that, in addition to the material transformations initiated by *Suncor* and *Syncrude* on their existing project sites, proposals which had been withdrawn as a result of both the recession and the NEP had been revised to include flexible alternatives to normative operation.

The second massive policy change came in 1996, as Premier Ralph Klein's Provincial Government drafted a revised royalty agreement designed specifically to encourage further Oil Sands development. Under the new policy, developers would be required to pay a 1% royalty (on all production) until capital costs had been recovered, at which point the

48 McKenzie-Brown et al., *The Great Oil Age*, 80.

royalty would transition to 25% payable on net project revenues.[49] By stipulating the recovery of capital costs, the new agreement was designed to benefit both long-standing producers (who could finance expansions to their existing facilities under the new policy) as well as attract new project proposals and initiate a lasting phase of construction under a less restrictive policy structure.

Finally, continuing petropolitical conflict in the Persian Gulf solidified a world market for the sale of Canadian synthetics – which remain significantly more expensive to extract and refine, but are geographically positioned in the stable West and are therefore (relatively) insulated from the political instability which had adversely affected the world market through the latter half of the 20th century. Kemp summarizes;

> *. . . world oil demand is again growing rapidly and may need to be met increasingly from Persian Gulf sources in the next decade. The Gulf War showed that the West had learned from the crises of the 1970s and now knows how to handle emergency energy situations. Nonetheless, the war caused increasing numbers of observers to recognize the volatility of the Middle East and the danger to the West of becoming dependant on its oil reserves again.*[50]

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49 Richard Masson and Brian Remillard, *Alberta's New Oil Sands Royalty System* (Edmonton, AB: Alberta Dept. of Energy, 1996).

50 Geoffrey Kemp, *Strategic Geography and the Changing Middle East,* 63.

THE FORT McMURRAY FACTOR
[2000 -]

By the end of the 1990s, rising oil prices had guaranteed a new phase of Oil Sands development under more stable economic conditions. The technical and political progress of the recession period (the deregulation of the Canadian energy sector, new royalty agreements, improvements in the resource recovery process, and experimentation with new extraction technologies) significantly reduced the costs associated with synthetic fuel production, while the global anxiety over '*Peak Oil*' and the geopolitical significance of petroleum resources (particularly in a post-9/11 context) continues to spur the exploration and development of unconventional fossil fuels in North America.

Hence, the recession period has been followed by an era of unprecedented industrial expansion; beginning, in the early 2000s, with the inauguration of commercial operations by both *Shell* and *Cenovus* (the first to open since *Imperial*'s 'Cold Lake' operation in 1985). For more than a decade the Oil Sands have sustained substantial annual growth; with cumulative yearly production surpassing 100 million cubic metres of petroleum product in 2013.

Figure 1.16 (next) charts year-to-year production alongside local census data collected between 1967 and 2013. As a statistical summary of the history of the Oil Sands, a number of key moments are registered in the population/production analysis, including: the advent of the global economic crisis (represented by a sharp fall in production quantities between 1971 and 1972); the construction and inauguration of the *Syncrude* facility (which initiated substantial population growth between

fig. 1.15 *Yearly Oil Sands Production & Regional Population Growth*

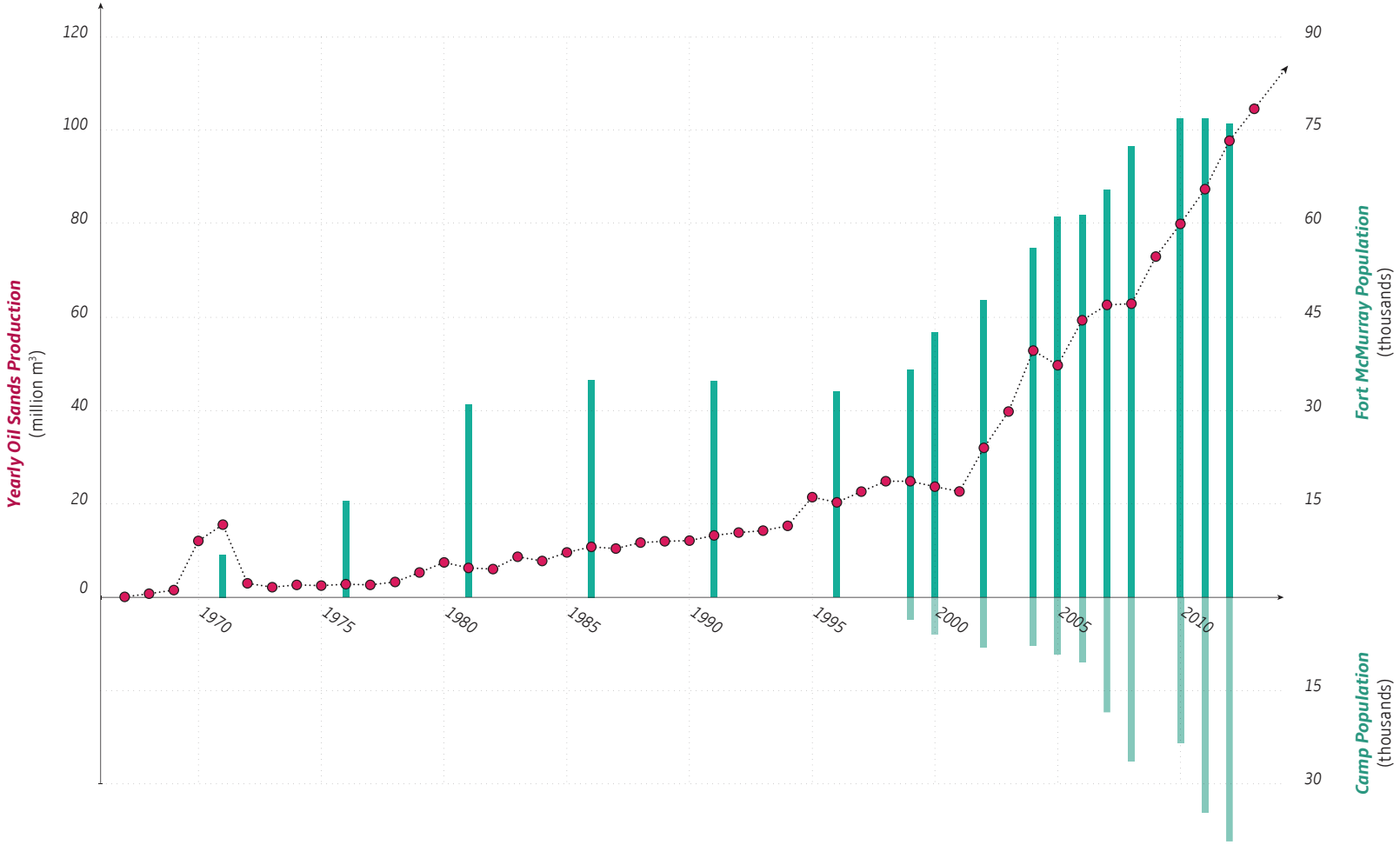
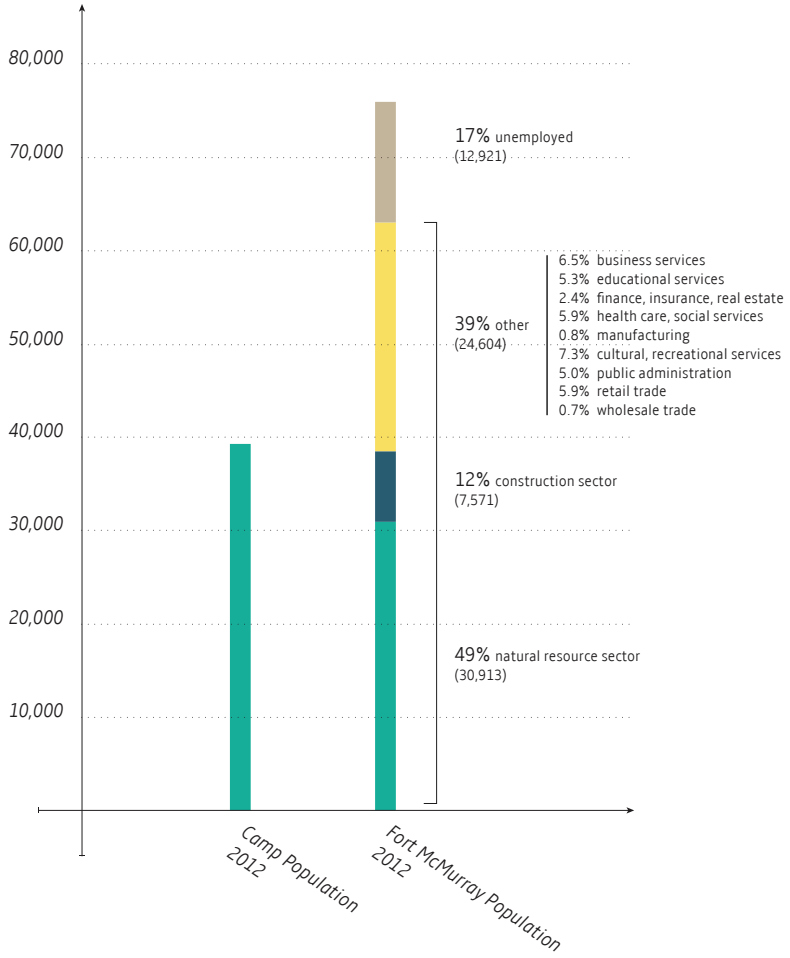


fig. 1.16 *Population Distribution by Employment*



1976 and 1981); the lasting economic recession (indicated by marginal production and population increases throughout the 80s and 90s); as well as the beginning of the current resource boom in 2002.

Today, Fort McMurray is overwhelmingly dependent on the Oil Sands for its socio-economic vitality. Approximately 49% of the permanent working population is employed in the natural resource sector, while an additional 12% are employed in the construction sector.[51] Naturally, the analysis (figure 1.16, far left) identifies a definitive correlation between successive expansions of industrial operations and the size of the regional population. Between 2003 and 2013, the volume of oil sand processed in Alberta increased from 40 million to 104 million cubic metres per year; an average annual growth rate of ~10%.[52] Over the same time period, the permanent population has grown from 48 thousand to 76 thousand residents (~5% average annual growth), while the population residing in work camps has grown from 8 thousand to 39 thousand migrant employees (~17% average annual growth).[53] While the number of migrant workers still appears as a fraction of the overall regional demographic, consider that the population of Fort McMurray contains a non-working demographic (of children, retirees, unemployed spouses of employed partners etc.) of ~17%,[54] while the migrant population is composed strictly of on-site employees whose families are permanently located elsewhere. As a result, the population of camp workers is actually

51 *2012 Census*, Regional Municipality of Wood Buffalo, 2012 (www.woodbuffalo.ab.ca/Municipal-Government/ Municipal-Archived-Census-Reports.htm), 95.

52 *Total Oil Sands Production Graph*, Alberta Energy Regulator: Oil Sands Information Portal, accessed May 7 2014 (environment.alberta.ca/apps/ OSIPDL/Dataset/Details/46).

53 *2012 Census*, Regional Municipality of Wood Buffalo, 28.

54 Ibid, 85.

a far greater proportion of the *working demographic* than the statistical analysis alone suggests (see figure 1.17, previous). What appears then, in *Figure 1.16*, as a gradual *phasing-in* of migrant workers over the last fifteen years has actually been a rapid shift in the way that working populations are organized in the Oil Sands.

It is worth noting here that these distinct demographic categories (resident/migrant) infer two entirely different approaches to both the built environment and the social organization of the industrial workforce. While a growing permanent population requires the evolution of a vibrant and livable urban project (including the development of municipal infrastructures, community and social services, opportunities for local businesses, and the diversification of the local economy), the migrant population is increasingly accommodated via the ubiquitous deployment of company camps: autonomous housing complexes located at the site of industrial operations, which – in their isolation – avoid meaningful integration with permanent communities. If the traditional urban process can be described as one of *densification* and *heterogeneity*, then the camp embodies a developmental logic which is precisely the opposite; it prioritizes *dispersion* (many habitable sites spread across the region) and *homogeneity* (the repetition of a singular architectural type).

The census data thus reflects a clear preference for the use of the camp in accommodating overall population growth – particularly in the years since the 2008 recession. Between 2008 and 2010, *Figure 1.16* registers a significant decline in the quantity of camp workers while both the permanent population and oil production volumes continued to increase. This suggests that, as prospective project economics worsened, oil operations quickly exploited the characteristic flexibility afforded the camp (and the type of work there organized) by reducing the size



fig. (1.17) **[above]** Aerial view of CNRL's Horizon site, north of Fort MacKay. Lower right of the image: 2,596 room MacKay River Lodge (camp reference #2, see pg. 108)

fig. (1.18) **[left]** aerial view of Fort McMurray; central urban area within the Regional Municipality of Wood Buffalo and traditional target of population expansion; 2012



of the working population and bringing construction work on industrial expansion projects to an immediate halt.[55] This exercise in organizational authority must have been incredibly successful considering that – in the years following the initial shock of the '08 crisis – regional population growth has been accommodated *entirely* via new camp construction while the population of Fort McMurray has remained relatively unchanged (in fact, the census data indicates a marginal *decrease* in the size of the permanent population since 2010, refer back to figure 1.16).

This information suggests that permanent town development is becoming increasingly irrelevant to industrial expansion; even in regions – like the Oil Sands – which are expected to remain viable for generations.

There are a number of reasons that this might be the case. For the last decade, Fort McMurray has been under considerable pressure to adapt to the rate of growth as dictated by the burgeoning oil sector, and has struggled to accommodate a rapidly growing population. In a 2006 interview with *MacLean's Magazine*, Mayor Melissa Blake elaborated on the nature of the issues faced by the community and its residents;

> *We simply don't have the infrastructure we need, given our population and the pace of industrial development. Roads, housing, hospitals, schools, recreational facilities, waste water treatment plants – everything we have was built for a much smaller population, and we have spent as much as we as a municipality are allowed to spend. . . .* [Oil Sands] *expansion projects are continuing*





55 See "Major layoffs expected after Alberta projects put on hold," *Journal of Commerce*, Feb. 11, 2009 (www.journalofcommerce.com/Home/News/2009/2/Major-layoffs-expected-after-Alberta-projects-put-on-hold-JOC032458W/).

fig. (1.19) **[left]** aerial view of MacKay River Lodge (camp reference #2, see pg. xx), on the CNRL Horizon site, north of Fort MacKay. The camp is one of three located on the Horizon processing site and accommodates more than 2,500 workers.

fig. (1.20) **[left]** exterior photograph of Wapasu Creek Lodge (camp reference #19, see pg. xx). Wapasu Creek Lodge is the region's largest work camp, and accommodates more than 5,000 workers.

> *yet we do not have the infrastructure even to support the people who are already here. We can't really wait to be able to flush our toilets or drive on safe roads. And because of our location, there's always been what we call a Fort McMurray factor, where we see a premium of 30 to 40 percent added on to construction projects.*[56]

The obstacles to permanent urban development have contributed to the adoption of a 'company owned' housing strategy, which (by prioritizing *migration* in lieu of *permanent residency*) is intended to accommodate the influx of oil sector employees without putting additional strain on permanent communities. Yet the pressures affecting stable growth within the municipality have not been alleviated.

In 2013 the *Canada Mortgage and Housing Corporation* reported that average rental values in Fort McMurray were the highest in the country: $2,162 per month for a two-bedroom apartment (nearly double the average rental values found in more developed metropolitan areas like Toronto: $1,213/month; and Vancouver: $1,281/month).[57] Similarly, housing prices in the municipality are the highest in the province; the average cost of a single-detached home in Fort McMurray through the fourth quarter of 2013 was $861,759 (for Calgary: $613,445; and Edmonton: $528,386).[58] The rising cost of relocation has been a significant

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56 Kate Fillion, "Interview with Mayor Melissa Blake," *MacLean's Magazine*, accessed March 12, 2014 (www.theoldfortamusingfromtheoilsands.blogspot.ca/2013/01/interview-with-melissa-blake.html).

57 *Rental Market Statistics*, Canada Mortgage and Housing Corporation, Fall 2013, accessed March 12, 2014 (www.cmhc-schl.gc.ca/en/hoficlincl/homain/foan/index.cfm).

58 *Housing Now: Prarie Region, Housing Market Information*, Canada Mortgage and Housing Corporation, January 2014 (www.cmhc-schl.gc.ca/en/hoficlincl/homain/foan/index.cfm) 47.

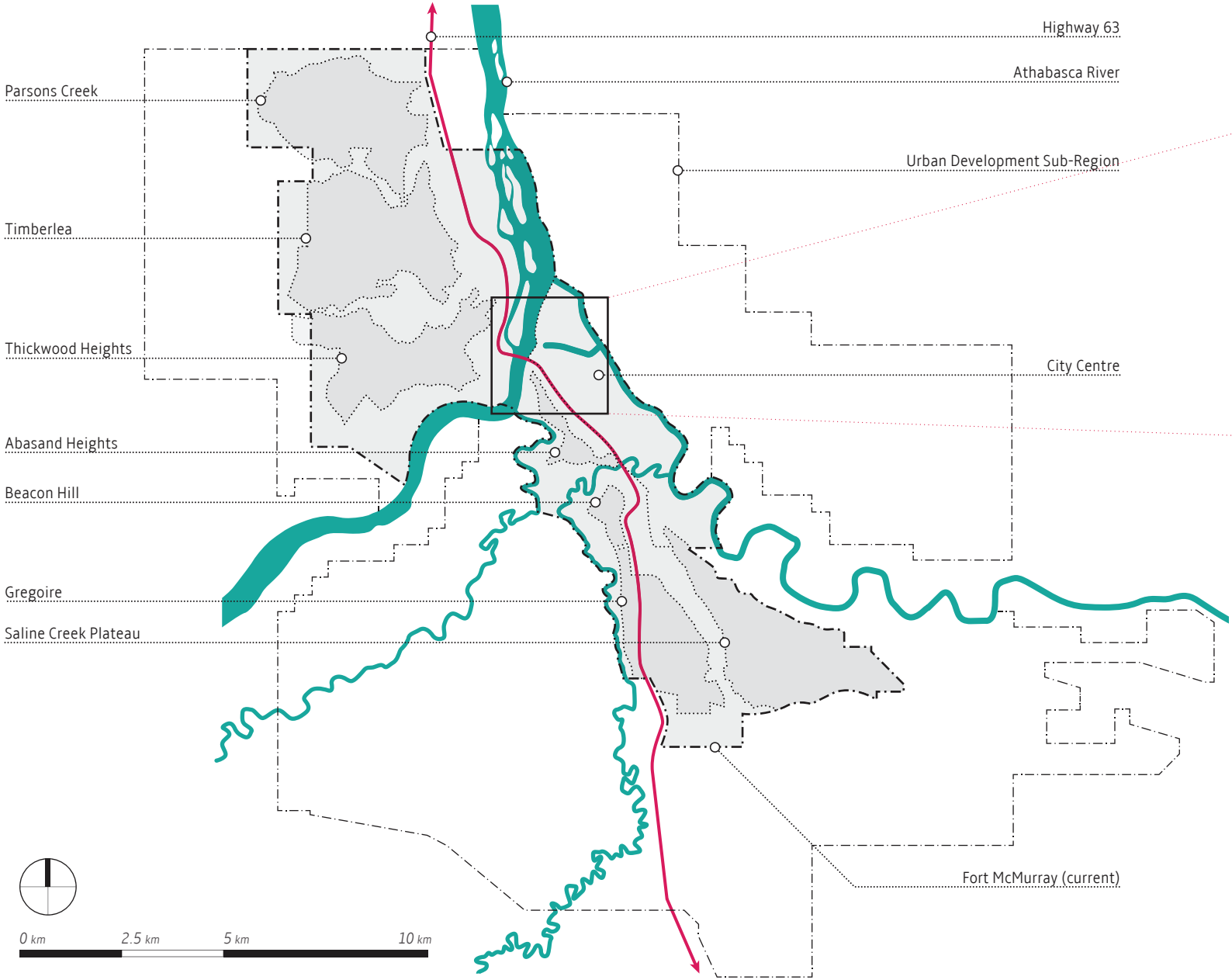

Highway 63
Athabasca River
Parsons Creek
Urban Development Sub-Region
Timberlea
Thickwood Heights
City Centre
Abasand Heights
Beacon Hill
Gregoire
Saline Creek Plateau
Fort McMurray (current)
0 km
2.5 km
5 km
10 km



fig. (1.21) **[above]** aerial view of Fort McMurray, looking northwest across highway 63 towards the confluence of the Athabasca and Clearwater Rivers.

fig. (1.22) **[left]** current footprint of the Urban Service Area of Fort McMurray in the Regional Municipality of Wood Buffalo. The 'Urban Development Sub-Region' designates Crown land to be made available for purchase (by the municipality) as part of a 25 year regional development plan, which is intended to more than double the land area allocated to Fort McMurray in the long term.

factor in the growing desire for accommodations alternatives, despite the six figure salaries typical of energy sector work.

These escalations in housing costs are just one aspect of a more general economic conflict over land in the Urban Service Area. Despite the 'boom-town' demand, the province has been slow in allocating new areas for municipal expansion. Land that *is* made available for development has often been the topic of intense debate; and while the construction of residential projects (and the accommodation of a larger permanent population) remains a priority for the Municipal Government, the development of commercial, recreational and institutional facilities (services for the existing population) are considered equally essential in the evolution of a sustainable urban project. Subsequently, the startup and operating costs associated with bringing new businesses to Fort McMurray can be prohibitive. The increased cost of living, the need to compete with industrial wages, and the limited population seeking part-time and service industry work, have dramatically inflated the competitive hourly wage; while property values and transport costs contribute to the inflated price of local goods. As a result, retailers have been apprehensive about operating in Fort McMurray despite the growing consumer population and high disposable income relative to other areas of the country.

In addition to the ongoing economic struggle, municipal transport infrastructures have become overburdened as the scope of industrial operation has expanded. Highway 63 (the principal transport route connecting the City of Edmonton to Fort McMurray and the Oil Sands, and the only all-weather road into Fort McMurray) is known colloquially as '*the highway of death*' due to the number of fatal accidents which occur

along it each year.[59] The single lane highway struggles to simultaneously accommodate commuter traffic and the transport of massive Oil Sands equipment; much of which requires the total width of two lanes and is transported throughout the winter months due to the seasonality of Oil Sands construction. In April, 2013 *Alberta Oil* reported on the transport of a 780 metric tonne module ("*twice the length of an Olympic-sized swimming pool*")[60] along Hwy 63, adding:

> *In 2012, the Alberta government issued more than 16,000 permits to heavy haulers moving oversized loads up Highway 63 to oil sands sites north of Fort McMurray. And 250 of those over-dimension trucks were carrying freight large enough to be classified as a super-load, meaning about 9.0 meters high and 7.4 meters wide. That's wide enough to cover more than two lanes of traffic – which is the width of most of Highway 63.*[61]

That translates to an average of nearly 45 oversized vehicles *per day* obstructing views into oncoming traffic and slowing the pace of travel between Edmonton and Fort McMurray. Updating regional infrastructures such that they can safely accommodate these super-sized industrial loads has proven to be a significant Provincial and Municipal expense. Recent projects have included the ongoing 'twinning' of the entire length of

fig. (1.23) **[right]** a 'super-load' sized industrial module en-route to the Oil Sands; from Alberta Oil Magazine, 2013.

fig. (1.24) **[right]** aerial view of the Athabasca River Bridge showing construction progress

59 Jen Gerson, "Alberta's Highway 63, an Oil Sands lifeline, has seen 46 deaths in five years," *The National Post*, April 30, 2012 (news.nationalpost.com/2012/04/30/albertas-highway-63-an-oil-sands-lifeline-has-seen-46-deaths-in-five-years/).

60 "780 tonne oil sands vessel hits Highway 63," *Alberta Oil Magazine,* April 1, 2013 (www.albertaoilmagazine.com/ 2013/04/oilsands-megamodules-fort-mac/), accessed March 11, 2014.

61 Ibid.





Highway 63 (its increase to two lanes plus the addition of an oversized paved shoulder) at an estimated 1 billion dollar total cost;[62] and the 2011 expansion of the Athabasca River Bridge in Fort McMurray (which has been structurally engineered for the singular purpose of supporting one thousand metric tonne industrial loads).[63] The revitalization of regional infrastructures is clearly a top priority for both the Provincial and Municipal Governments, which have had to carefully balance the needs of industry with those of the resident population. As new extraction projects are developed on increasingly distant sites (requiring dangerously long commutes before and after the ten hour shifts typical of oil industry employment) traffic congestion and commuter safety have contributed to a growing desire for alternate forms of inhabitation, and have ultimately bolstered the local argument favouring camp construction.

The *de facto* deployment of company work camps well outside the municipal limits of Fort McMurray ***seems*** to be a direct response to these factors. As the conventional urban project becomes more and more hostile to prospective employees seeking oil industry work, corporations have initiated an accommodations alternative which – at face value – seems to circumvent the issues plaguing the 'permanent town.' In *The Urbanization of Capital* (1985), David Harvey has elaborated on the economic significance of housing in relation to the production process;

> *The agglomeration and concentration of production posed an*

62 "The Long Road," *Alberta Construction Magazine*, Jun. 1, 2013 (www.albertaconstructionmagazine.com/index.php/issues/8-summer-2013/3-the-long-road).

63 "Alberta's largest bridge deck opens in Fort McMurray," *Government of Alberta*, Oct. 26, 2011 (alberta.ca/announcements.cfm).

> *immediate quantitative problem for housing workers in the right locations – a problem that the capitalist initially sought to resolve by the production of company housing but that thereafter was left to the market system. The cost of shelter is an important item in the cost of labor power. The more workers have the capacity to press home wage demands, the more capital becomes concerned about the cost of shelter.*[64]

According to Harvey, corporate concern for workforce accommodations stems from an anxiety over the wage-price: as the cost of living near productive operations increases, labour will be more likely to organize and demand a higher wage. Clearly escalating property values and cost of living concerns have contributed to the desire for alternate forms of frontier accommodations, however, the introduction of camp work in place of a more permanent domestic configuration indicates a more fundamental relation which is not yet captured by Harvey's generalization.

First and foremost, the mass deployment of company work camps reveals a transitional moment which is actually the reverse of Harvey's scenario: '*capital*' has shown a renewed interest in the supply and ownership of workforce housing in lieu of a market context which is seen as *limiting* with respect to the progress of industrial operations. Just as the global crises of the 1970s revealed characteristic *rigidities* associated with capitalist production under Fordism, the economic, infrastructural and political factors limiting the development of Fort McMurray have revealed a characteristic *rigidity* associated with the conventional urban

64 David Harvey, *The Urbanization of Capital: Studies in the History and Theory of Capitalist Urbanization* (Baltimore, MD: Johns Hopkins University Press,1985) 28.

project (the isolated *company* or *single industry* town); which is simply too slow in responding to rapid workforce growth, and too centralized to accommodate geographic extensions of the industrial footprint.

Second, the wage price in the Oil Sands (and in *all* remote industrial territories) is naturally inflated as a means of attracting sizeable work forces to remote production locations. Unlike the manufacturing sector, which is relatively mobile and can therefore *seek-out* competitive urban labour markets, primary resource industries (which are, by definition, location specific) traditionally rely on the capacity of '*capital*' to permanently situate stable working populations near the site of production; often in locations where no pre-existing permanent communities exist. This implies above average wages, the construction of appropriate housing, the provision of social services and, ultimately, ***job security*** (since the burden of relocation on the working individual is so great). In the case of the manufacturing sector, it is the 'site of production' (the factory) which moves towards fixed populations of workers which are, theoretically, located in areas of the globe where there is a labour surplus and the cost of labour is relatively inexpensive. In the Oil Sands (and, potentially, all instances in which modern work camps are deployed) the 'site of production' is necessarily fixed and it is labour (surplus or 'inexpensive' labour) which is coaxed into motion as a means of creating competition and driving the wage price downwards.

This leads to my third and final point: insofar as the current mode of production can be characterized (as Harvey proposes) by *flexibility*, '*capital*' seems less concerned with the absolute cost of labour (and by extension, the cost of market or company housing) than it is with the production of a particular *kind* of labourer: ***the migrant***, whose economic value is derived from ***(a)*** greater organizational authority,

(b) the dissolution of long-term social responsibilities to the working population, and ***(c)*** the elimination of geographic limits in the search for new labour power. This emphasis on the *form* of labour, which is not yet present in *The Urbanization of Capital* (1985), appears in *The Condition of Postmodernity* (1989), as Harvey observes;

> *The current trend in labour markets is to reduce the number of 'core' workers and to rely increasingly upon a workforce that can quickly be taken on board and equally quickly and costlessly be laid off when times get bad.*[65]

According to Harvey, the transition from *Fordism* to *flexible accumulation* entails a 'massive re-organization' of the labour market structure which is characterized by an emphasis on '*peripheral*' (rather than *'core'*) labour groups (figure 1.26, right).[66] The labour market *'periphery'* is categorically defined by *numerical* (as opposed to *functional*) flexibility, and therefore describes a segment of the working population capable of immediate quantitative fluctuation. Consequently, an emphasis on '*peripheral*' labour entails an overall decrease in *job security* and an overall increase in the prevalence of *precarious* work.

In *The Condition of Postmodernity*, the macro transition from *'core'* to *'peripheral'* labour is primarily theorized around revisions to the working contract; businesses simply offer fewer *'core'* positions while prioritizing short-term, contracted or otherwise temporary working arrangements. However, in an article for *Perspecta* (1990), Harvey seeks

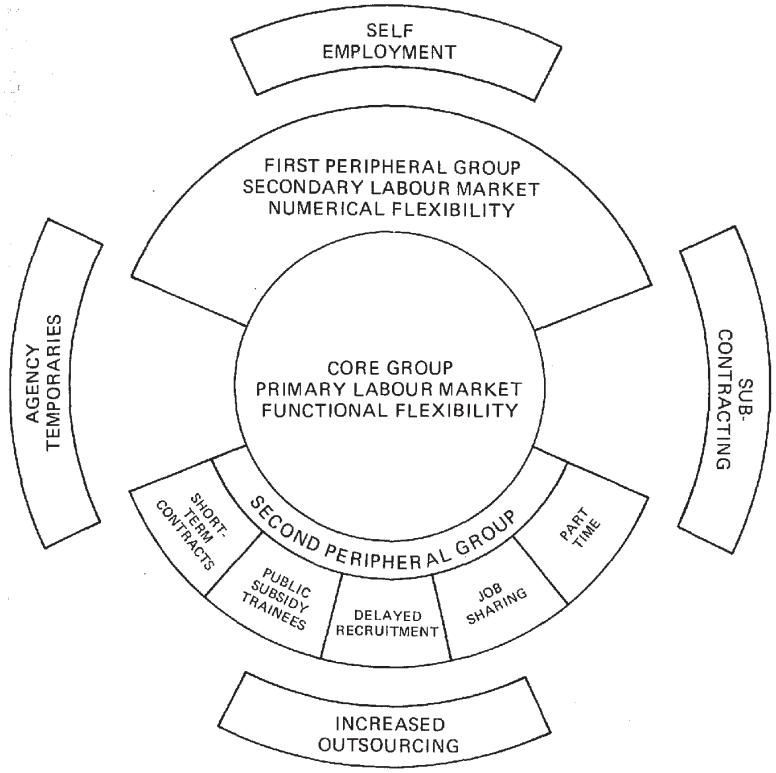


fig. (1.25) **[above]** labour market structures under 'flexible accumulation', found in David Harvey, *The Condition of Post Modernity*, Ch. 9, pg. 151

65 David Harvey, *The Condition of Postmodernity*, 152.

66 Ibid, 151.

to implicate the urban process in post-modern reformations of the labour market structure:

> *It has partly been through shifts in the urban process that the new systems of flexible accumulation have been so successfully implanted. . . . It seems reasonable, therefore, to look at transitions in the urban process as a key point of integration of the political-economic move towards flexible accumulation and the cultural-aesthetic trend towards post modernism.*[67]

In a mono-economic context (such as the one surrounding Fort McMurray), where corporations exercise a unique authority over the urban project, this move towards a more flexible labour structure registers – with exceptional clarity – amongst the domestic spaces serving industrial operations.

Consider, for example, that the permanent resident – who owns or lets property, relocates a family unit, and generally participates as a member of the local community – is, as if by default, a *core* worker; since the provision of stable employment is a prerequisite to the act of 'settling' in a particular place. The ***working subject*** (in this case, the *core* employee), and his/her ***domestic circumstance*** (as a permanent resident), is supported by an ***urban project*** (the company or 'single industry' town); which contains – by design – all of the implements necessary to produce and maintain that subjectivity, including (among other things) durable housing, spaces for the family unit and domestic life, social services,

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67 David Harvey, "Flexible Accumulation through Urbanization," *Perspecta* 26 (1990) 254.

institutional functions, and a range of socio-economic activity. The simple superimposition of a revised working contract (in this case, '*precarious*' or '*peripheral*' work) atop the established urban project is problematic precisely because the working subject – the ***form*** of labour – is so firmly entrenched within the urban and domestic spheres. As a result, the transition from *core* to *peripheral* (from *Fordism* to *Post-Fordism*, from *rigid* to *flexible*, etc.) has engendered an alternate urban project codified around a distinct domestic/working subjectivity.

Herein lies the ambition of the contemporary camp: to supersede the organizational prerogatives of the permanent town, to subvert the organizational power of the rooted working individual, and to fashion a more flexible working subject according to the present requirements of capitalist production.

So considered, the camp is not simply a corporate accessory for avoiding the practical problems plaguing Fort McMurray, nor is it a municipal palliative which conveniently allows the pre-existing urban process to continue while temporarily relieving the demographic pressures associated with rapid industrial expansion. Instead, the present adaptation of the camp typology is the mechanism with which working populations are imbued with the 'numerical flexibility' characteristic of a *post-modern* labour structure. To enter into the domestic contract of the work camp is to occupy the labour market 'periphery.' As such, the camp does not just *participate* in a process of subjectification; it is the quintessential design object – the apparatus, the interface, the translational device – which facilitates the conversion from one *form of labour* to another.

Harvey is quick to provide a final clarification about the emergence of

flexibility as it pertains to the organization of the working class: it can appear to be mutually beneficial but is, in general, designed to favour the economics of production at the expense of the working population.

> *Such flexible employment arrangements do not by themselves engender strong worker dissatisfaction, since flexibility can sometimes be mutually beneficial. But the aggregate effects, when looked at from the standpoint of insurance coverage and pension rights, as well as wage levels and job security, by no means appear positive from the standpoint of the working population as a whole.*[68]

In the Oil Sands, the perceived benefit of the camp to the working class is readily apparent: harsh working environments, extreme weather conditions, rising housing and rental costs, long commuting distances, and an underdeveloped urban project, all contribute to a willingness – growing within the working population – to adopt the domestic lifestyle of the migrant (or fly-in/fly-out) worker. It is partly because these factors are so obvious that the camp has emerged unchallenged *despite* the sociological imperatives which have become integral to the spatialization of migrant work.

When conceived as an instrument of *flexible accumulation* the camp is opened to criticism regarding subversive/coercive manipulations of the working individual, the agency of the working class, and the extent to which architectural/urban processes support imbalance within the employer-employee power relation.

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68 David Harvey, *The Condition of Postmodernity*, 152.


BLDG 223



02 | THE COMPANY CAMP

More flexible work arrangements are part of a larger global trend in the pattern of employment in a post-industrial world. . . . Post-industrial mining regimes take corporatist neo-liberal logic to an extreme, one perhaps encapsulated in the figure of the FIFO [fly-in fly-out, or 'migrant'] *worker – contracted, non-unionised, with bulging pay packet, compressed work roster, fragile job security and truncated family and community life.*

– Kerry Carrington & Margaret Pereira, '*Assessing the social impacts of the resources boom on rural communities*'

BACKGROUND

Few authors have attempted as exhaustive an investigation of frontier camps as Edmund Bradwin, who first published *The Bunkhouse Man: A study of work and pay in the camps of Canada* in 1928. Bradwin's text provides a detailed account of life and work in the construction camps of the Canadian transcontinental railway during the first decades of the twentieth century, and is uniquely concerned with the collective working experience of those who relied on remote camps (and the work there offered) for their livelihoods. While much of *Bunkhouse Man* is an elaboration on the operational peculiarities and organizational formalities of the rail camp (including, in short sections, descriptions of the architectural objects constituent of the typical company camp), Bradwin's primary concern remains the wellbeing of the *'campmen;'* a body of labourers comprised largely of recent immigrants who – he concluded – were often under-educated or illiterate, and both economically and socially disadvantaged.[1]

For Bradwin, the problematic of the camp is twofold. On the one hand, camp work represents a distinctly exploitative context in which frontier workers are subject to abnormally harsh working conditions in return for meagre compensation. Bradwin isolates the camp itself as an index of unique exploitations; describing the bunkhouses he observed as *leaky, overcrowded, neglected, 'fly infested', hastily constructed* and

1 Edmund W. Bradwin, *The Bunkhouse Man: A study of work and pay in the camps of Canada 1903-1914* (Toronto, ON: University of Toronto Press, 1972) ix.

poorly located in addition to being both *unsanitary* (a detriment to workers physiological health) and *unsafe* (prone to catastrophic fires and impossible to escape during such an event).[2] Bradwin notes that, within the context of the camp, workers are uniquely susceptible to economic exploitation by both their employers and the employment agencies which pair individuals with remote jobs; who often promised higher wages than were eventually paid, charged employees for expenses related to their hiring, and neglected to pay workers their daily wage if inclement weather postponed their work.[3] Perhaps most importantly, Bradwin concluded that the isolated nature of camp work meant that the working population was severely limited in its ability to confront capital or demand situational improvement; indicating that the companies involved had established a status quo via the camp which remained unchallenged despite the offensive living conditions found on the frontier.

On the other hand, Bradwin saw these overt exploitations as being exacerbated by what he perceived as a *general apathy* surrounding the conditions of camp work;[4] a societal unwillingness to engage the camp beyond its being a necessary (and temporary) armature in the

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2 Ibid, 75-90.

3 In one passage Bradwin describes a group of workers promised (by an employment agent) specialized jobs upon their arrival at camp, where they would be divided amongst blacksmiths (at $75.00/day), cooks (at $60.00/day), carpenters (at $4.00/day) and labourers (at $2.00/day) depending on their skill-sets. After a three day journey to the site of the remote camp (much of it on foot) it was found that all had been contracted (despite their spoken agreement) as un-skilled labourers at the minimum possible wage, and the foreman – not requiring any additional skilled workers and unwilling to revise what he regarded as binding contracts – demanded his new employees perform the work for which they had been hired or face incarceration. See Bradwin, *Bunkhouse Man* (1972), 72-73.

4 Ibid, 216.

mobilization of nationally significant industrial projects (like – but not limited to – the construction of the Canadian Pacific Railway in the early twentieth century). Bradwin elaborates:

> *For two generations and more, even as late as the present decade, the people of Canada have apparently condoned the lax conditions of housing in camps as being incidental to the very nature of the tasks. Meanwhile, the romance, latent in many forms of frontier work, is generously extolled in song and story. Thus the campman himself, whether as a lumberjack or navvy, lauded as semi-heroic in the robustness of his personal qualities, has long been deemed to disdain the need, even, of the common physical comforts.*[5]

This is a recurring theme throughout *Bunkhouse Man*: the conflation of a stereotypical figure – the 'semi-heroic' frontiersman – with the uniquely coercive conditions of actual frontier works, and the overwhelming perception that the arduous conditions of the frontier are a necessary consequence of societal progress. In a later passage, Bradwin expands on the role of the 'outsider' and implicates a number of parties (including the church and the press) in the preservation of the status quo;

> *. . . minor officials of all such new places are too often indifferent; the church is out of touch in any real way with the inmate of the bunkhouse, while the outside press, enamoured of the bigger things, remains uninformed* [of the condition of the camp], *all of which lulls the public and serves to tether the labourers in such*

5 Bradwin, *The Bunkhouse Man*, 85.

fig. (2.02) **[right]** a crew lays rail ties along a stretch of the Canadian Pacific Railway through the Fraser Valley (British Columbia) circa 1881. Author unknown.

fig. (2.03) **[right]** Chinese rail workers camp alongside a stretch of the Canadian Pacific Railway in impromptu log cabins, circa 1885. Author unknown.





places to the existing conditions of work and pay. Being, too, but a relatively small part of the whole field of labour, the work of men in isolated camps does not loom large in the public eye, and it is apt to be overlooked.[6]

Bradwin's observations reflect a rhetoric which is as relevant to today's camp as it was to the camps he documented over a century ago; an ends–means rationalization in which the national (and even, international) significance of frontier projects justifies – to the public at large – the conditions of work and pay. Invariably, this line of argumentation relies on a preconception which posits the camp as a temporary consequence of economic progress, rather than as an organizational paradigm integral to the mobilization and inhabitation of all such endeavours. While it is important to note that, in the decades since Bradwin's investigation, work camps have been subject to significant improvement (owing, of course, to technological innovations in commercial transport and construction techniques), *Bunkhouse Man* nonetheless points to the frontier camp as an archetype complicit in exploitations of the labouring population, and makes an implicit suggestion: that future camps will continue to function in a similar way.

Of course, Bradwin's understanding of the camp as the site of unique exploitations was not (at the time it was published) a universally accepted theorization of the camp and camp life. In *Mining Camps: A Study in American Frontier Government* (1884), C.H. Shinn attempted to construct a causal relation between the organization of ancient and medieval mining

6 Ibid, 221-222

settlements and the inhabitation of the American west, while hypothesizing that the social formation of the western United States originated with the self-organization of early camp workers;

> *To-day, over the western third of the United States, institutional life traces its beginnings to the mining camp: that is the original contribution of the American pioneer to the art of self-government. . . . the early miners of the Far West showed large and noble capacities for bringing order out of chaos, strength out of weakness, because they were a picked body of men, and also because the life they led fostered friendship, encouraged individuality, and compelled the closest social union.*[7]

Unlike the corporate rail camp investigated by Bradwin, the mining camps of California's 1849 gold rush (Shinn's ultimate object of study) were a reflection of frontier era land-ownership and mining claims traditions, which were adopted with the intention of encouraging permanent settlement in the underdeveloped west. To a more modern audience (and considering, in kind, a modern camp), Shinn's lack of first-hand experience living in camps, his confident valorization of the camp worker, and his blatant racialization of historical materials, seriously undermines the credibility of his work. In *Work Camps and Company Towns* (1975), for example, Knight's bibliographical annotation dismisses *Mining Camps* altogether, simply stating: "*Mining camps and American democracy* [are] *described as the playing out of Aryan racial culture. Has to be read to be*

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7 Charles H. Shinn, *Mining Camps: A Study in American Frontier Government* (Gloucester, Mass: Peter Smith, 1970), 4-5.

believed. Still widely cited as a serious work."[8]

In spite of Knight's objection, *Mining Camps* remains a (somewhat) valuable resource in considering the contemporary camp for two principal reasons. First, Shinn historicizes the evolution of the mining settlement (as well as its associated codifications of land, tenancy, and mineral rights) as it appeared in different areas of the globe and at different times; beginning with ancient Egyptian and Grecian examples, and culminating with the nineteenth century expansionism characteristic of the settlement (and development) of the American west. Critically, Shinn's work ends where much of the popular literature concerning the camp and camp work begins (at the end of the nineteenth century) and, despite its pervasive racialisms, succeeds – at least – in contextualizing the early history of mining formations at a global scale.

Second (and perhaps more importantly), Shinn's thesis regarding the self-organizational propensity of early American miners posits a radically alternate theorization of the camp than the one being pursued here (which bears a closer resemblance to Bradwin's articulation of an overtly exploitative architectural circumstance). Inevitably, Shinn's optimism concerning the camp and camp worker (his adoption of the stereotypical *semi-heroic* frontiersman as the basis for his thesis proposition) resulted in the description of an architectural/urban object with a morphological tendency towards permanence; one which often spawned economically diversified towns as localized extraction projects matured and expanded, or else disappeared as the resource was exhausted.[9] *Mining Camps* therein provides a conceptual basis for distinguishing

8 Rolf Knight, *Work Camps and Company Towns in Canada and the U.S.* (Vancouver: New Star Books, 1975) 78.

9 Shinn, *Mining Camps* (1970), 5-6.

present-day camps from their predecessors and, in addition, offers the opportunity to uncouple our present theorization of the camp from a wildly outdated conception of the 'frontier'; one which posits *camp* as the precursor to permanent inhabitation, instead of conceiving of the camp *as is* (the camp as traditionally understood is the *penultimate* rather than the *ultimate* organizational object).

This preconception – that work camps are predisposed to *'becoming town'* – remains prevalent in contemporary approaches to the problem of remote settlement in the Oil Sands. The Province of Alberta's *Comprehensive Regional Infrastructure Sustainability Plan*, or CRISP, (a document crafted specifically to address the future of infrastructural development throughout the Oil Sands) contains a short section on the prevalence of work camps across the province, and proposes – as the solution to an increasingly scattered footprint of individual camps – the adoption of just such a morphological camp model; whereby designated camp clusters develop organically into more permanent 'camp communities' as industrial activities mature in a specific location.[10] These intended communities theoretically transition from temporary to more permanent forms of housing as mobile construction work forces are gradually replaced with facilities operation employees (who are, presumably, more likely to 'buy into' the new town or hamlet and live permanently near the site of extraction operations). Of course, in addition to avoiding the problems posed by economic diversification and the provision of remote services (issues which have contributed to the adoption of camps over pre-existing communities in the first place), and

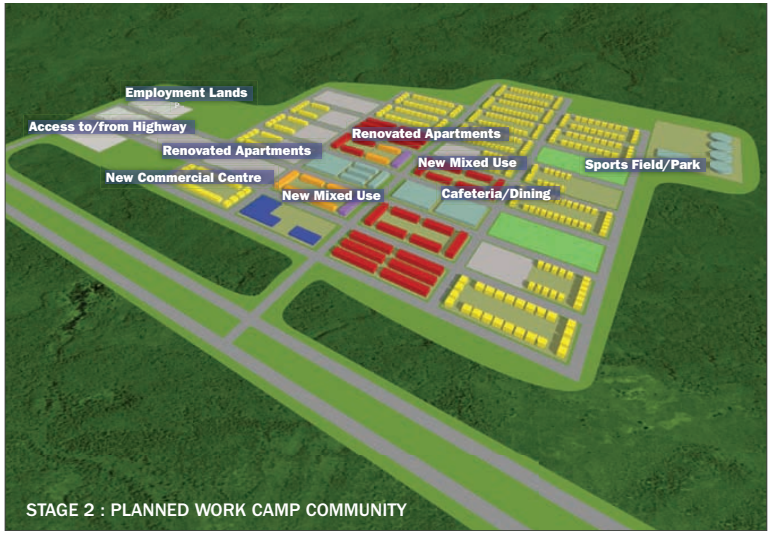


fig. (2.04) **[above & right]** clockwise from top: stages 1 through 3 of the planned 'work camp communities' described within the Alberta 'Comprehensive Regional Infrastructure Sustainability Plan.' From the CRISP (see footnote 10, left):

> "As the workforce begins to transition from construction to operations in Stage 2, more family housing (shown in yellow) is introduced. Some of the original temporary housing (shown in red) is converted to apartment housing (shown in orange). Some of the communal facilities that had serviced the construction workforce become mixed use commercial areas (shown in purple). Some secondary industry is also introduced in planned employment areas."

> "In Stage 3, with a relatively stable operations workforce, the planned work camp community begins to establish itself as a permanent community with the addition of some community services such as schools and health care facilities. It would be expected, however, that some planned work camp communities would not reach this phase of evolution, and would instead wither stabilize as worker communities or be decommissioned over time,"

10 *Comprehensive Regional Infrastructure Sustainability Plan: Athabasca Oil Sands Area* (Edmonton, AB: Government of Alberta, 2011), 21-23.





indeed even basic sociological issues like the prospect of child rearing in an isolated 'camp-like' environment, the CRISP strategy fails to ascertain *the value* of the ***flexible*** (or alienable) camp worker within the current corporate organizational logic and assumes that a return to some form of market or government housing (or even industry initiated township) is possible within the current industrial scenario.

Considering strategies like those proposed in Alberta's CRISP, it is clear that what Bradwin identified as a general apathy towards the conditions of camp work is today more a misinterpretation of the fundamental purpose of the camp than a complete dismissal of its significance. Undoubtedly, there exists a general awareness (reflected in the region's infrastructure plan) that the continuous deployment of camps is a flawed methodology for accommodating continued growth in the Oil Sands; one which socially disadvantages the individuals who work and live on remote work sites and is therefore un-sustainable in the long term. However, in the absence of a basic theorization which reveals the fundamental purpose of camps and camp work in lieu of more permanent forms of habitation, propositions to supplant the current camp model with some alternate architectural or urban solution are stuck in confrontation with a relatively autonomous (privately owned/operated) 'urbanism' which – from the perspective of industry – functions efficiently and effectively, and is therefore resistant to change.

Ultimately, the descriptions provided by Bradwin, in *Bunkhouse Man* (1928), and Shinn, in *Mining Camps* (1884), reflect two extreme – and opposite – conceptions of the isolated labour camp; neither of which suffices to fully describe the work camps found on remote industrial sites today. Bradwin's observations of explicit economic exploitations

and abhorrent living conditions contributed, in the decades after their publication, to substantial improvements in the treatment of remote workers and in the construction of remote work camps; which are, at least in Canada, now regulated by various public authorities and held to a standard of quality far beyond what Bradwin had come to expect. On the other hand, Shinn's utopian idealization of the self-organized mining camp (as the precursor to permanent inhabitation and democratic self-governance) reflects only a brief moment in the development of the North American continent, and is only peripherally related to the hegemonic corporate organizations typical of remote work sites today.

It is Rolf Knight's similar dissatisfaction with the body of available historical materials which prompts his crafting a more objective definition of the company camp in 1975; which serves as a complete stripping away of the social, political and academic agendas driving the work of Bradwin, Shinn and others, in favour of a straightforward description alluding to the functional specificity of the camp as an organizational object:

> *Work camps are typically all-male settlements of workers engaged in isolated primary resource industries and on construction projects. Specific camps are established and operated by a single company and provide barrack housing and board at isolated work sites. Most camps are relatively impermanent, lasting from a few months to a few years, and are frequently marked by a certain seasonality of operation. Workers usually "sign on" for a limited duration, after which they may return or try another camp. At one time a large proportion of camp workers were single men. Today however the normal percentage of men working in camps have families, often resident in towns and villages. Camp workers*





generally have homes or home bases from which they enter and leave camp work. The bunkhouse is for most not a home.[11]

Like Bradwin, Knight felt compelled to approach the camp from the perspective of the labouring individual; in so doing, his definition reveals a sociological angle which includes (albeit briefly) the family structure and the domestic life of the frontier worker.

Despite the range of formal transformations (aesthetic, technological, scalar etc.) which the typical company camp has undergone since the publication of *Work Camps and Company Towns* in 1975, Knight's observations (which are derived from years of first-hand experience living and working in logging camps in British Columbia) remain a crucial characterization of the domestic project realized within the contemporary work camp; which normalizes a hyper-delineation between 'live' and 'work' spaces, and creates a 'mobile' or 'transient' working individual who cycles between the home and the camp.

fig. (2.05) **[left]** modular cabins of 'Camp 10' en route (by rail) to Chemanis, British Columbia circa 1935. Photo by Jim Reid.

fig. (2.06) **[left]** modern bunkhouse interior; Caycuse, British Columbia circa 1954. Photo by Cam Chouinard.

11 Knight, *Work Camps and Company Towns* (1975), 7.

WHAT IS A WORK CAMP?

01 [DESIGN & CONSTRUCTION]

Strictly speaking, a work camp is any building – or collection of buildings – providing room and board for a population of workers on an isolated industrial site. Camps are required during all phases of remote work and can appear throughout the exploration, construction and operations stages of a project life-cycle. While the size and permanence of each individual camp varies according to the requirements of a given project, all contemporary camps conform to a strict set of design criteria which makes them easy to identify and categorize.

In the Oil Sands, camps are usually sited with direct access to major transportation infrastructures (including provincial highways, private aerodromes and company service routes) which facilitate the movement of goods and personnel into and out of the camp. Depending on the size of a given facility (and its proximity to municipal/provincial infrastructures) potable water, sewage and solid waste may be trucked (or air-lifted) to and from the camp along with food, fuel and other miscellaneous supplies. The majority of camps are located directly on the site of the operations facility which they are intended to service. Where this is not the case (for example, with 'for profit' camps which operate as a commercial enterprise rather than as an extension of a single extraction operation), the inclusion of shuttle services – which ferry groups of workers to and from nearby project sites throughout the day – becomes an operations necessity.

The typical camp consists of only two main building components:

EXAMPLE SITE PLAN
Suncor workforce accommodations

(figure 2.07, right)

1. **Suncor Millennium Lodge** (commons)
   2,058 bed industrial camp
2. Millennium Lodge dormitories
   single storey detached sleeper blocks
3. camp parking
4. **Suncor Borealis Lodge** (commons)
   1,504 bed industrial camp
5. Borealis Lodge dormitories
   three storey sleeper blocks w/ covered walkways between units
6. site services
   (power generation, potable water storage, sewage & waste storage)
7. shuttle bus parking
8. outdoor recreation area
   (with tennis court and baseball diamond)
9. highway 63
   (north, to Fort MacKay; south, to Fort McMurray)


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9

a central commons (containing a kitchen, dining room and administrative offices, as well as ancillary program and amenity spaces); and semi-detached wings of dormitory blocks which extend off of the central facility to form evenly spaced rows of employee living quarters (see schematic floor plan, figure 2.08). These wings constitute the bulk of the square footage for each camp complex, and contain a private dorm room for each employee as well as wash, shower and laundry facilities (which are most often shared between neighbouring rooms or are common to a dormitory floor). Depending on the intended population of the facility, dormitory blocks are constructed up to three storeys tall and typically accommodate between 20 and 50 people per floor.

These building volumes (the commons and the dormitory) are assembled from standardized pre-fabricated building components which are constructed en-masse in a warehouse setting and are then individually delivered to the site of the camp or operations facility. As a result of the mass production process, the size and shape of a typical camp module is largely based on the relevant regulations governing the transport of commercial loads between the warehouse and the camp site. In Alberta, a standard camp module measures approximately 18*m* by 3.5*m* (or about 60*ft* by 12*ft*) and are typically 3*m* (or 10*ft*) in height. This standard size can vary depending on the method and route of transportation; for example, some small exploratory camps might require units to be airlifted to the site of deployment, while other camps might need to be transported along unpaved service roads. These criteria must be taken into account when determining both the size and weight of the base camp module.

In figure 2.09 (next), the camp has been illustrated as a scalar architectural installation which can expand (perhaps infinitely) based on the natural extrapolation of the modular construction schema. In the

There is great uniformity in the outward appearance of all frontier camps. A great similarity, too, distinguishes their appointments on whatever class of work, whether it be in the woods, on a mining prospect, or along railway construction. One pattern seems to have served the purpose for all future building. . . . This uniformity in camps is apparent not only in Ontario and Quebec, but farther west in the wooded parts of Manitoba as well as in Alberta and northern Saskatchewan. . . . This rigid adherence to previous designs may be accounted for by the exigencies of work in frontier places, particularly by the usual lack of facilities for profitable transporting to isolated camp sites the necessary building material, but combined with this there is also the conservative attitude towards changes of any kind that marks the functioning of life in camps.

– Edmund W. Bradwin, *The Bunkhouse Man: A study of work and pay in the camps of Canada 1903-1914,* p. 76

1000 ROOM CAMP

schematic plan by 'STACK Modular'

(figure 2.08, right)

1000 person cafeteria & kitchen
~ 300 prefab. trailer units (@ 12' x 60')

GROUP A

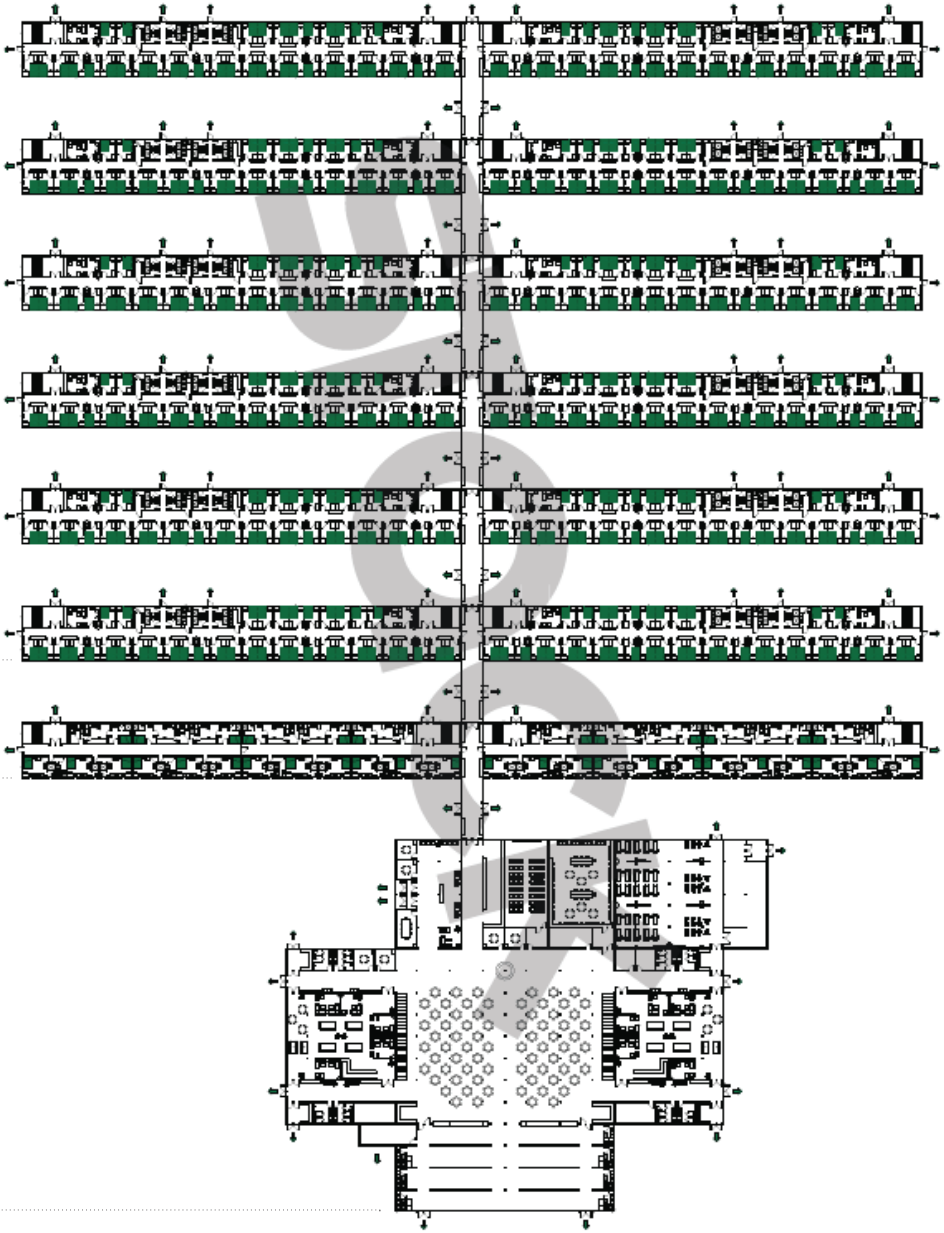
2 storey standard sleeper wings
39 persons per floor
single rooms, common wash & shower

GROUP B

2 storey executive sleeper wings
18 persons per floor
single rooms, private wash & shower

GROUP C

dining room & cafeteria
kitchen, food prep. & storage
administration & security
lounge & fitness area
mud room



10 - 100 beds.

single building
minimal amenities
- dining/cafeteria
- lounge
- fitness

common or private w/c.

uses:

exploration
single site operations
- in-situ

100 - 500 beds.

single or multiple buildings
standard amenities
- dining/cafeteria
- lounge (games, theatre)
- fitness
- commissary

generally common w/c.

uses:

single site construction
single site operations
- in-situ
- open pit

500 - 1000 beds.

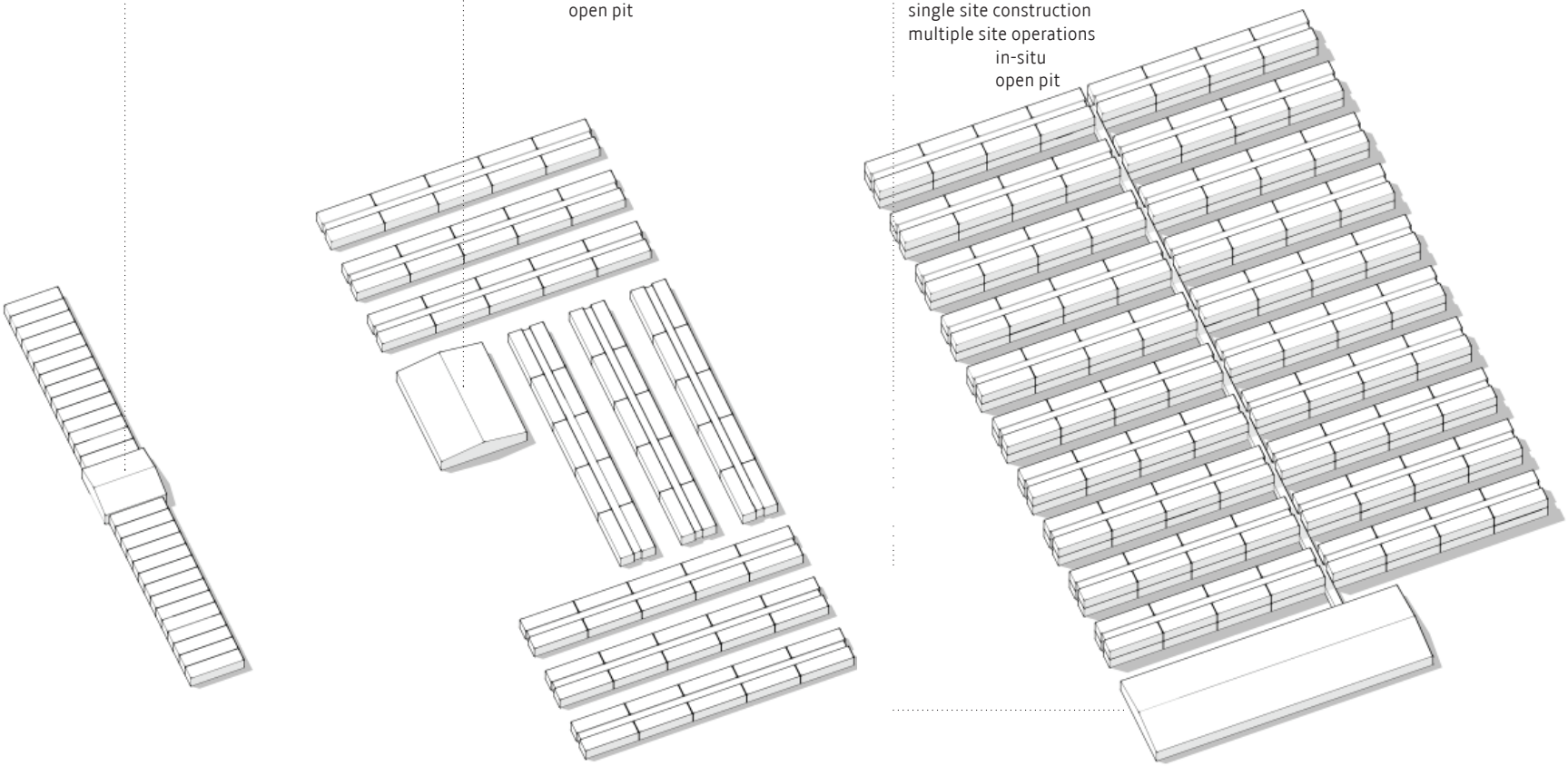
single or multiple buildings
- covered connecting walkways
- up to three storey sleeper wings

luxury amenities
- dining hall / cafeteria
- games room
- theatre room
- gymnasium / fitness rm.
- organized recreation

combination private & common w/c.

uses:

single site construction
multiple site operations
- in-situ
- open pit



> 1000 beds.

single building
- covered connecting walkways
- up to three storey sleeper wings

luxury amenities
- dining hall / cafeteria
- games room
- theatre room
- gymnasium / fitness rm.
- organized recreation
- sporting facilities
  - driving range
  - baseball diamond
  - indoor ice rink

combination private & common w/c.

uses:

multiple site construction
multiple site operations
- in-situ
- open pit

TYPICAL CAMP CONFIGURATIONS

for the exploration, operation and construction of remote worksites

(figure 2.09)

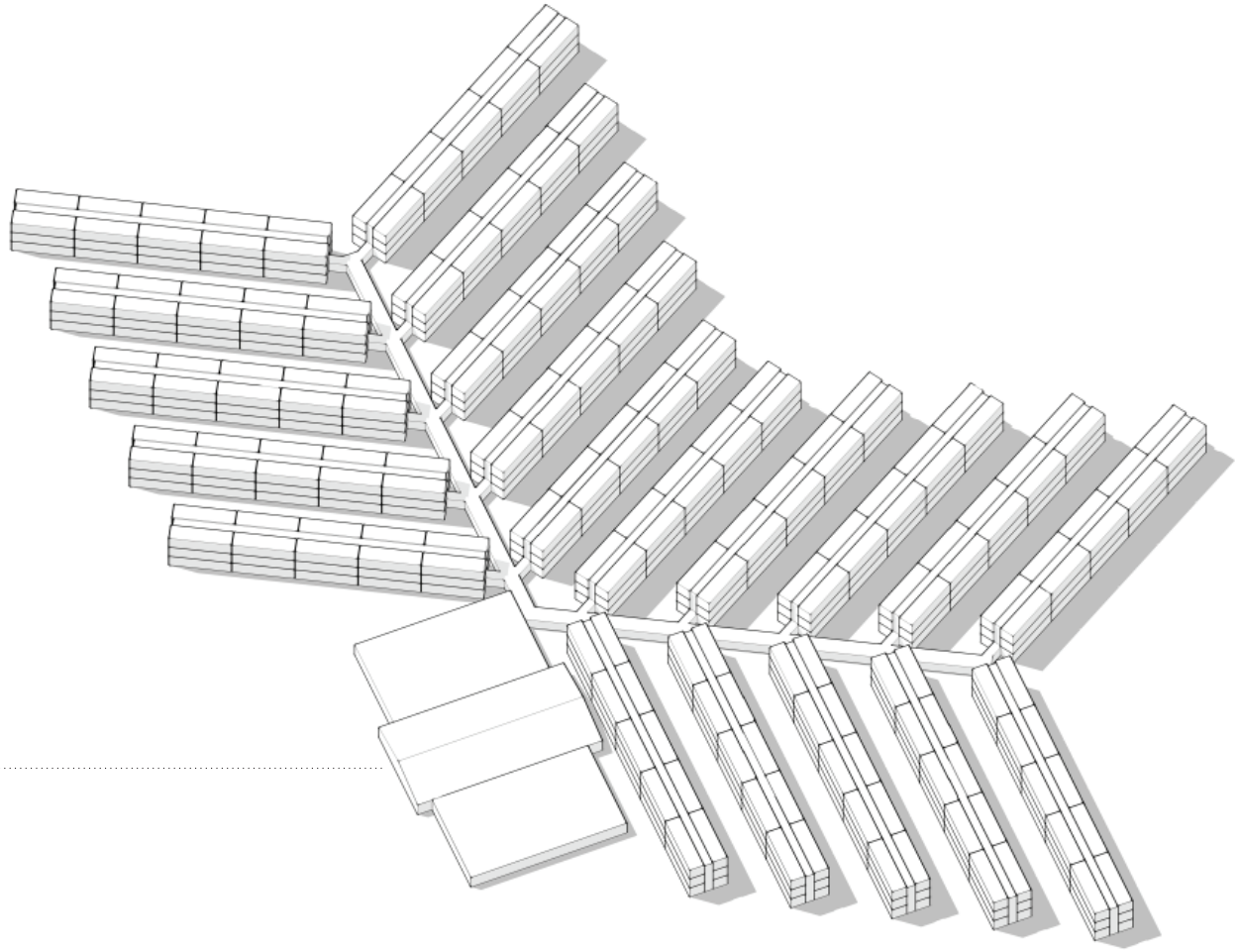




fig. (2.10) **[top left]** a row of stick-frame camp units nears completion in the ATCO facility near Calgary, AB. These trailer units will be loaded onto the backs of flatbed trucks and shipped north to the Oil Sands, where they will be arranged on site for final assembly.

fig. (2.11) **[bottom left]** workers guide a pre-finished exterior wall panel as it is hoisted into position above a unit skid.



fig. (2.12) **[top right]** the mass production process involves the simultaneous construction of multiple building components within a single facility. Here, a row of stick-frame units is captured early in the framing process.

fig. (2.13) **[bottom right]** while some units are clad and weather-sealed on site, others are constructed to completion in-house (which includes the installation of all mechanical, electrical and plumbing fixtures as well as final furnishings).





Oil Sands, the largest company camps house several thousand employees and are (for all intents and purposes) permanent installations which will operate for the complete duration of extraction activities. Despite this, the techniques applied to their construction and assembly are nearly identical to the smaller – more transient – exploratory camps which accommodate only a handful of employees. It is clear that a singular architectural strategy – one which is surprisingly versatile despite the apparent homogeny of camp deployment – has been applied to the construction of *all* remote accommodations regardless of their intended size or siting.

The prefabricated modules which are combined to create the final camp complex are overwhelmingly constructed using light timber framing techniques, although lighter more durable steel units are becoming prevalent (particularly as camps become designed for disassembly and re-deployment). Each 60' by 12' module is constructed as near to completion as possible, and often includes full mechanical outfitting (HVAC systems, electrical work and plumbing), insulation, weatherproofing and – in some cases – final cladding. Ultimately, the prefabrication process is designed such that the duration and quantity of on-site construction work is vastly reduced, since the transport of labour and materials to a variety of disparate sites is difficult to manage and can be prohibitively expensive. It is far simpler to cycle the building trades through a single urban warehouse – with access to a large and variegated labour pool – in which a number of work camps (with their nearly identical unit types) can be manufactured simultaneously. ATCO, Britco and Civeo are prominent examples of Alberta corporations with centralized facilities in Edmonton and Calgary, who regularly transport building elements to Oil Sands sites north of Fort McMurray.

Once they arrive at the work site, trailer units are simply stacked

TYPICAL UNIT CONSTRUCTION

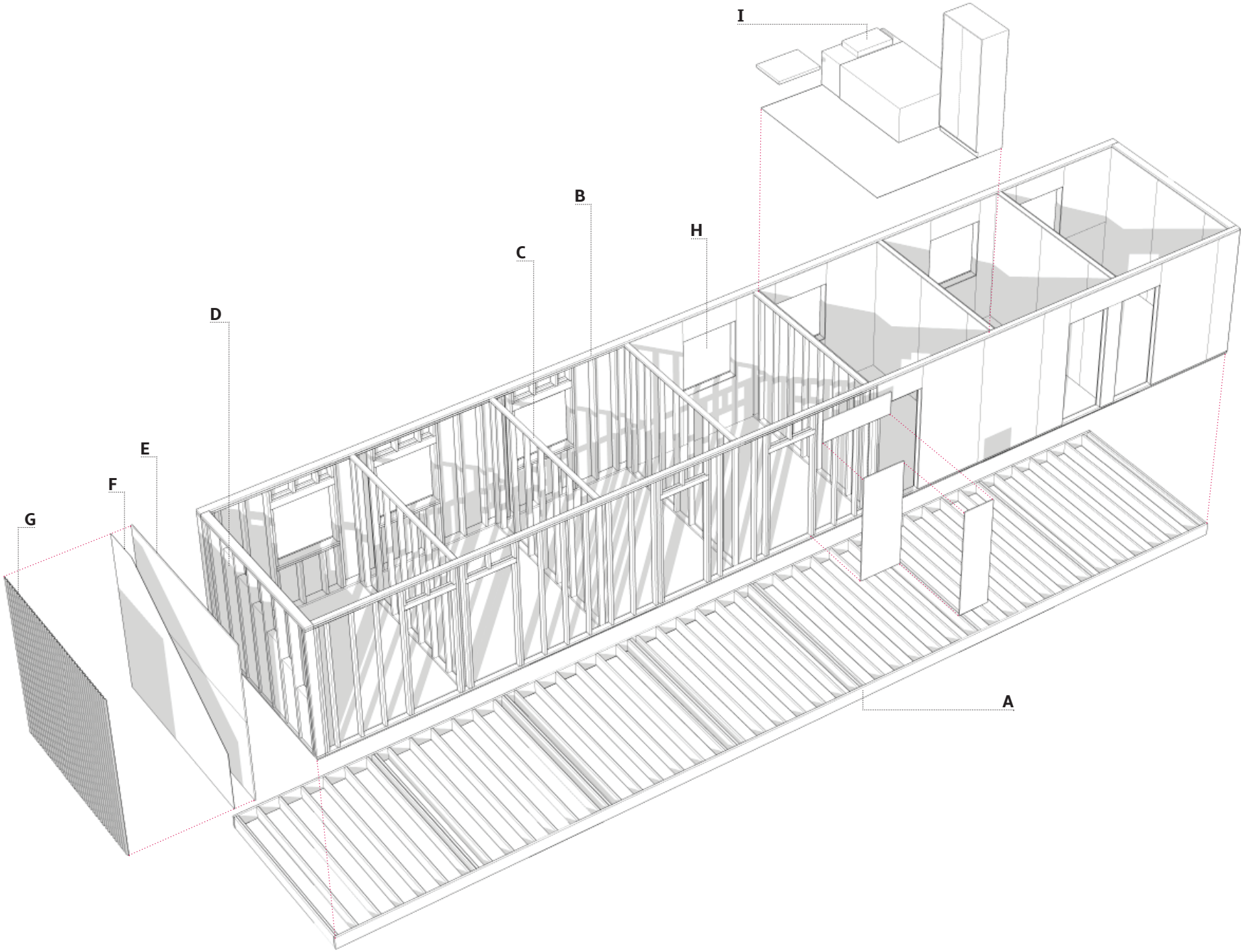
7 bedroom sleeper module

(figure 2.14, right)

exploded axonometric drawing
(not to scale)

A 2" x 10" wood floor joists @ 400 mm O.C.
B 2" x 6" structural wood studs @ 400 mm O.C.
C 2" x 4" STC rated partition (typ.)
D 150 mm mineral wool insulation (R20)
E 13 mm plywood (or OSB) sheathing
F 0 mm combination air/vapour barrier
G corrugated metal siding
H 36" x 28" window opening (typ.)

I Typical room plan including millwork & mattress


I
B
H
C
D
E
F
G
A

atop a grid of pre-inserted steel piles, fastened together, and sealed, while site services (natural gas generators, groundwater wells, on-site water/ sewage treatment facilities etc.) are installed and tested. Mechanical systems strategies are as variegated and adaptable as the camp typology itself and differ depending on the size and permanence of the facility as well as its proximity to public sector infrastructures. This whole process – from design to operation – typically takes between 6 and 10 months for medium-to-large camp complexes, and can occur even faster (between 2 and 4 months) for smaller specialized camps which require only a handful of trailer units to be deployed with little-to-no site preparation.

It is clear that the techniques applied to the design and construction of remote work camps have been tailored to both economize and expedite the production process. Nonetheless, the camp remains a crucial design object which demands some form of dedicated spatial analysis. Figures 2.18 through 2.27 (pages 78–81) explore the project of the camp planimetrically using typical unit patterns collected from various camp providers. Both the commons (fig. 2.18 & fig. 2.19) and the dormitory (fig. 2.20 though 2.27) are presented as scalable building volumes, which can be arranged (and re-arranged) to absorb any number of additional prefab units and thus encompass an ever larger population of workers. These larger program elements are then grouped into sub-categories of programmatic modules (sleeper & wash units, kitchen & dining units, etc.), which serve to further dissolve the camp into its most basic component parts. The goal of this exercise is to unpack the organizational logic of the contemporary camp using a typical (100 – 200 bed) example, and to illustrate the architectural language which follows from the mass production process.



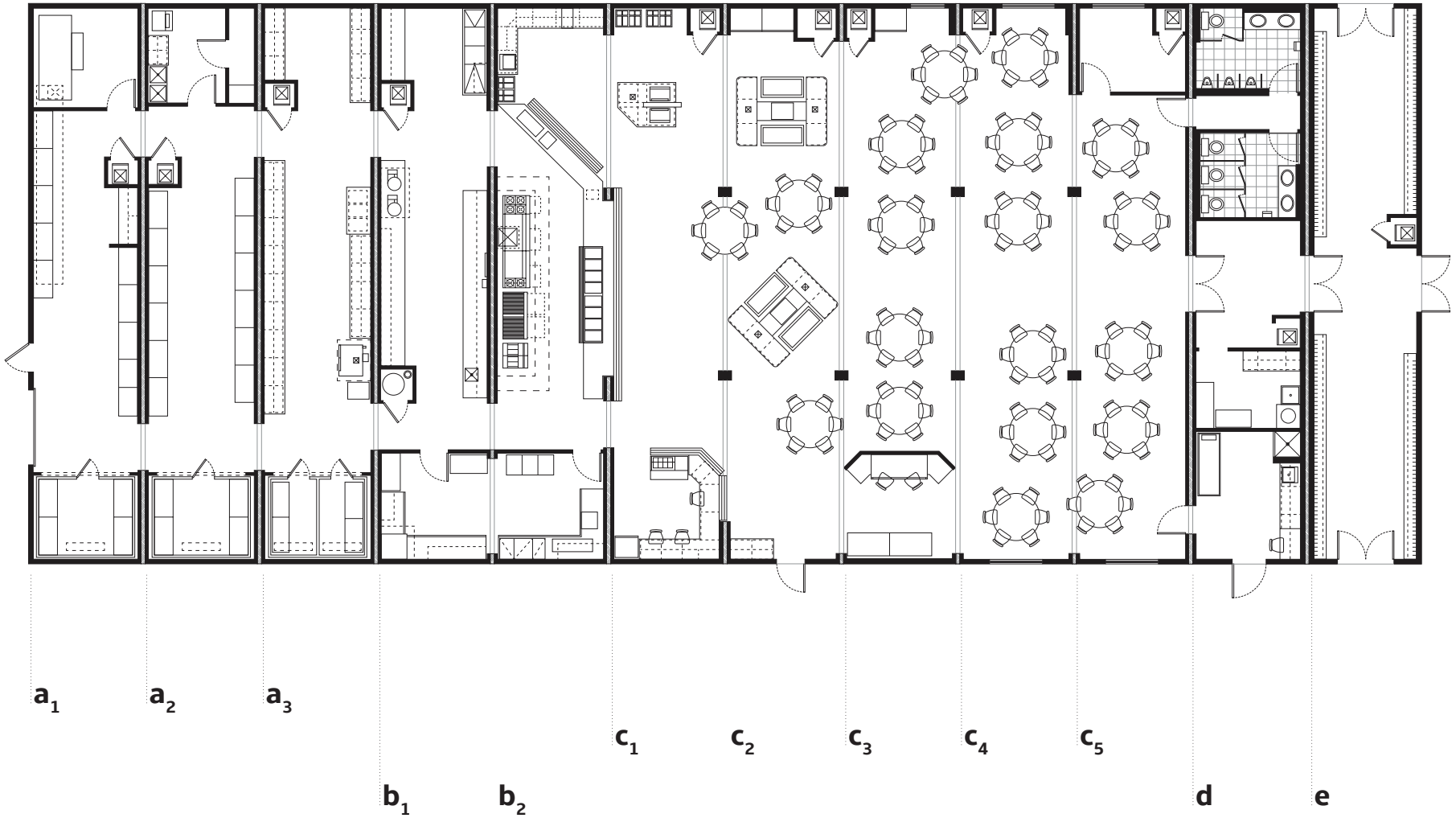


fig. (2.15) **[top left]** a hydrovac excavator shown preparing pilling holes at the site of Noralta Lodge's Fort McMurray Village, north of Fort McMurray, AB. 2012. Photo: Ken Josuttes.

fig. (2.16) **[bottom left]** dormitory construction at the site of Noralta Lodge's Fort McMurray Village. 2012. Photo: Ken Josuttes.



fig. (2.17) **[right]** prefab timber modules are lifted into place on the site of Noralta Lodge's Fort McMurray Village. 2012. Photo: Ken Josuttes.


a1
a2
a3
b1
b2
c1
c2
c3
c4
c5
d
e

TYPICAL CAMP LAYOUT

central dining & admin. building

(figure 2.18, left)

120 person cafeteria & kitchen
12 prefab. trailer units (@ 12' x 60')

GROUP A

food storage
pantry
2 walk-in refrigerator units
2 walk-in freezer units
loading

GROUP B

kitchen & food preparation
buffet / self-serve stations
storage & cleaning room

GROUP C

cafeteria (dining room)
12 dining tables
3 self serve kiosks
administrative office
welcome desk

UNIT D

men's & women's washrooms
security office (w/ shower, vanity & cot)

UNIT E

main entry
mud room (boot & coat storage)

TYPICAL CAMP LAYOUT

multi-purpose pavilion

(figure 2.19, right)

4300 sf. multi-purpose / lounge / fitness
6 prefab. trailer units (@ 12' x 60')

UNIT A

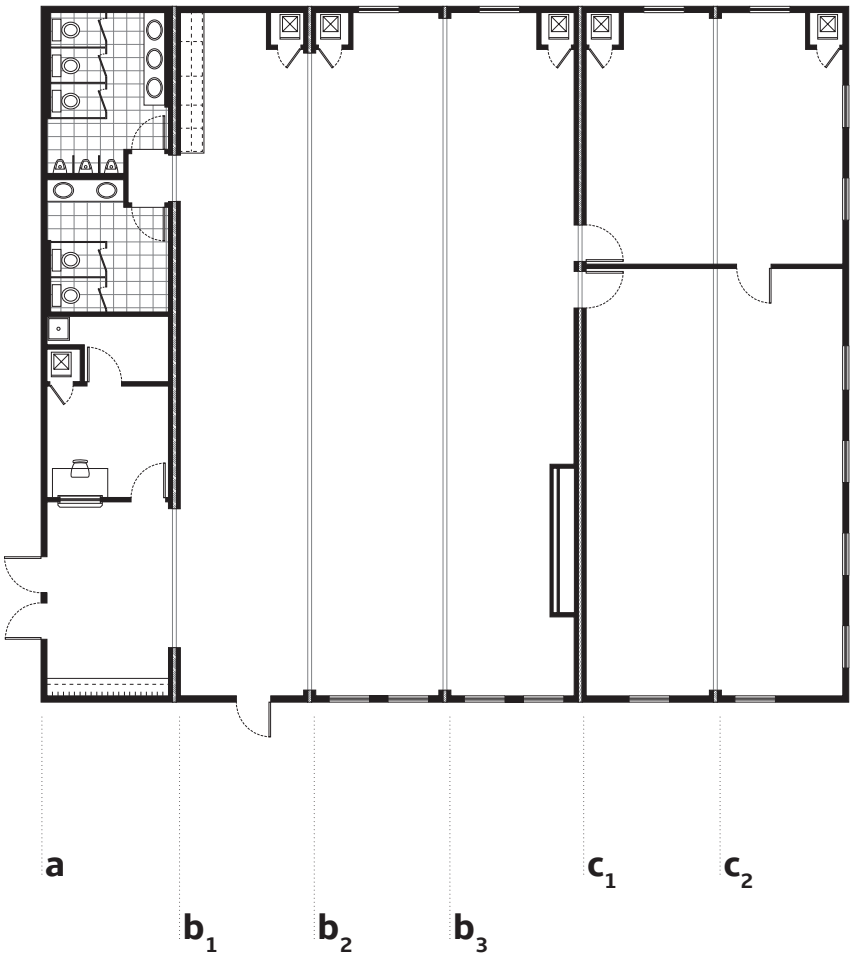
main entry & mud room
sign in / admin.
storage
men's & women's washrooms

GROUP B

large multipurpose space
(typically a lounge or bar area)

GROUP C

medium and small multipurpose rooms
(typically fitness rm., games rm., or theatre)

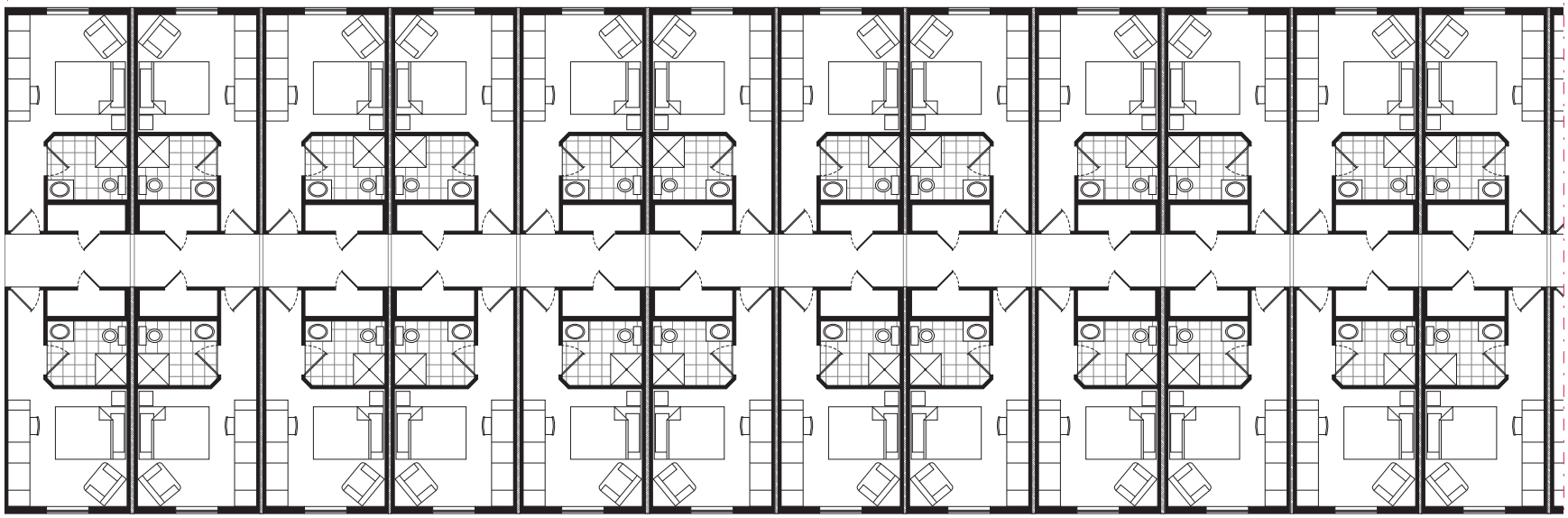


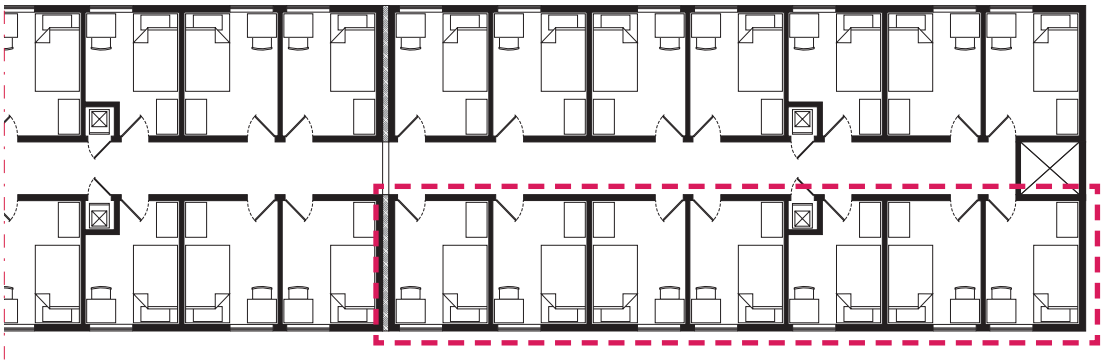


A_1^*

A_2^*

E^*





TYPICAL CAMP LAYOUT
standard sleeper wing

(figure 2.20, top left)

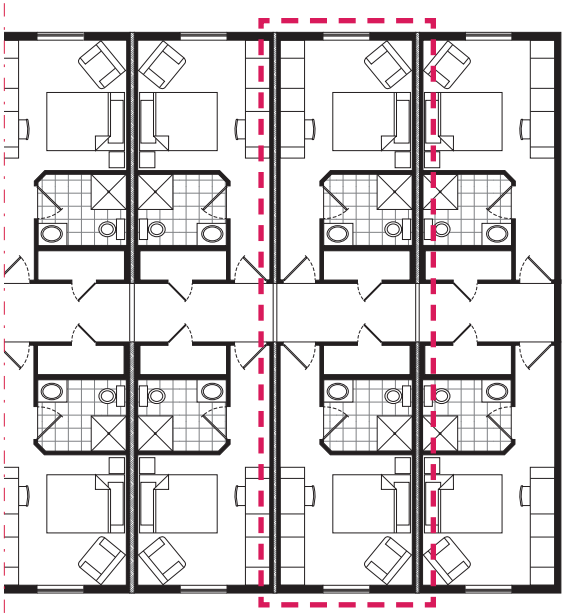
49 person dormitory
8 prefab. trailer units (@ 12' x 60')

UNIT A_1

7 individual worker rooms (@ 100 sf)
furnished with:
- twin bed
- wardrobe
- desk & chair

UNIT A_2

common wash & shower stalls
shared laundry facilities
janitorial storage



** letters correspond to enlarged unit plans, see figures 2.22 - 2.27 next*

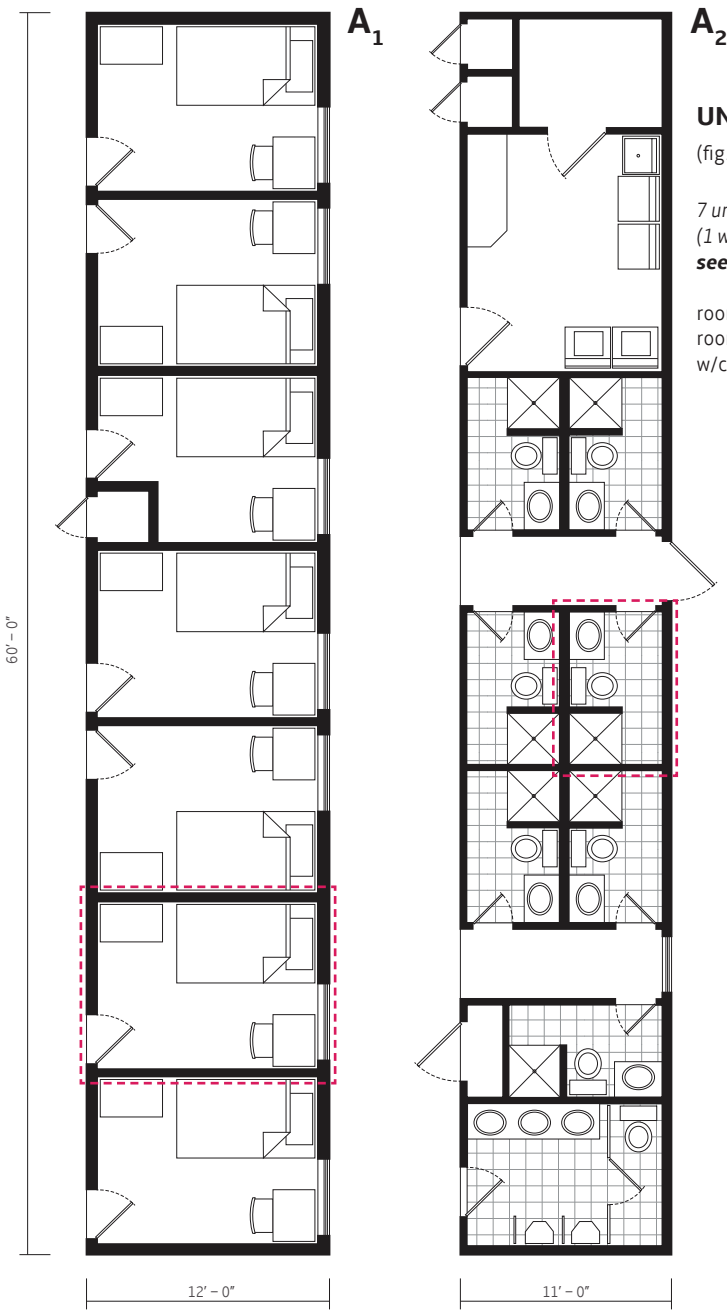
TYPICAL CAMP LAYOUT
'executive' sleeper wing

(figure 2.21, bottom left)

32 person dormitory
16 prefab. trailer units (@ 12' x 45')

UNIT E

2 individual worker rooms (@ 150 sf)
furnished with:
- double bed
- bedside table & lamp
- desk & chair
- lounge chair
- mini-fridge
- television

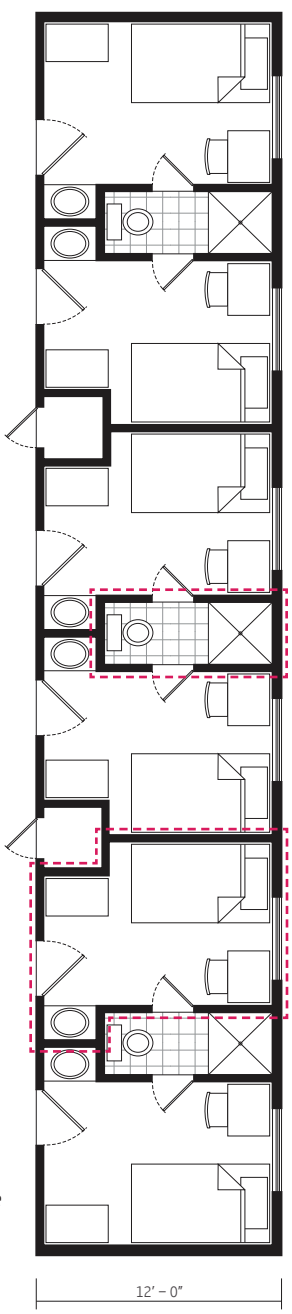


UNIT(S) A

(fig. 2.22; fig. 2.23)

7 unit sleeper module + dedicated W/C, laundry
(1 wash unit : 7 sleeper modules)
see floor plan, previous

room size:	100 sf
room type:	single
w/c:	common

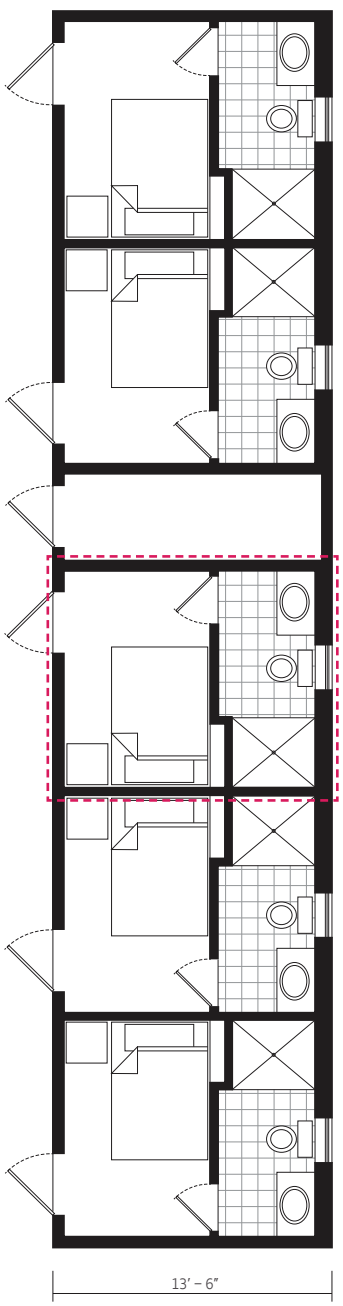


UNIT B

(fig. 2.24)

6 unit wet sleeper module

room size:	100 sf
room type:	single
w/c:	shared

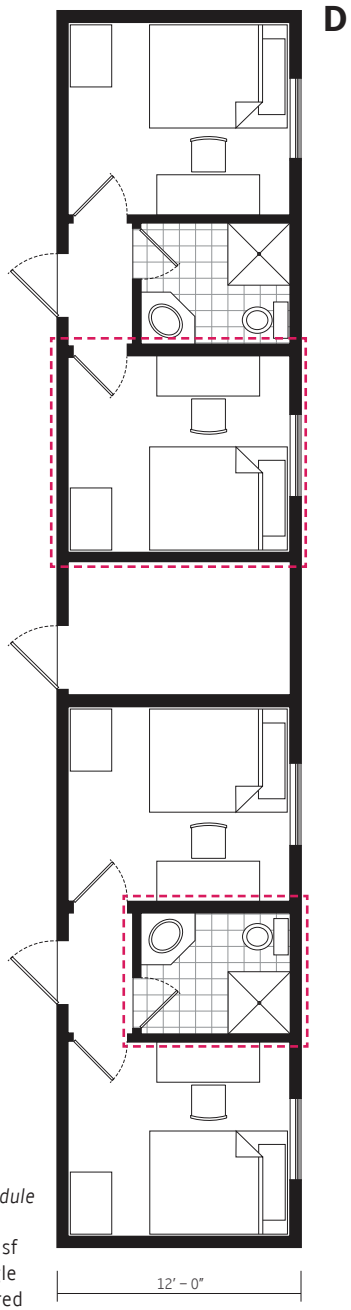


UNIT C

(fig. 2.25)

5 unit wet sleeper module

room size:	75 sf (+ 65 sf w/c)
room type:	single
w/c:	private

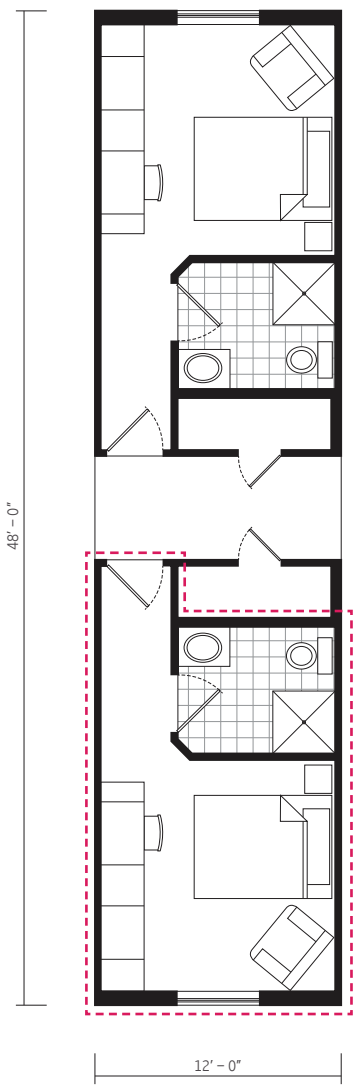


UNIT D

(fig. 2.26)

4 unit wet sleeper module

room size:	110 sf
room type:	single
w/c:	shared

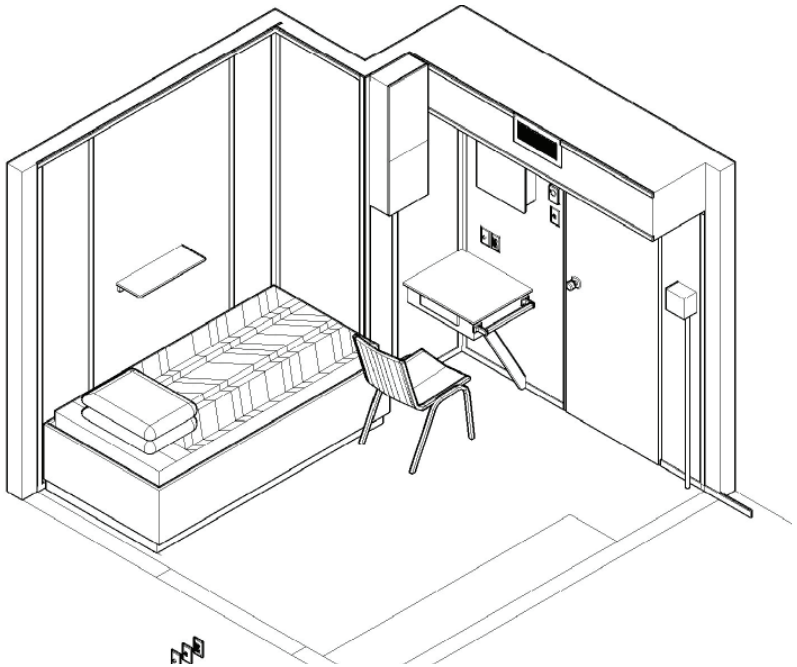


UNIT E

(fig. 2.27)

2 unit wet sleeper module
see floor plan, previous

room size:	150 sf (+ 65 sf w/c)
room type:	single
w/c:	private



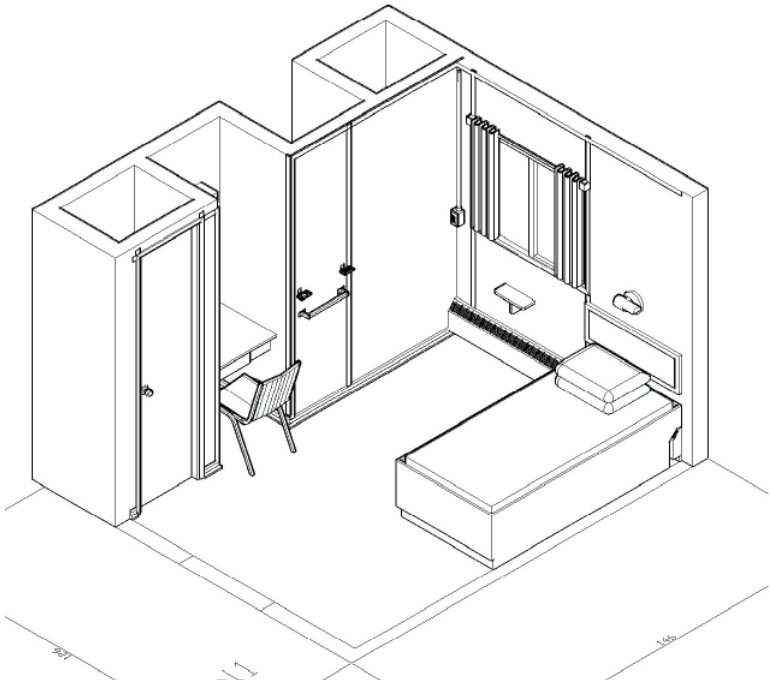
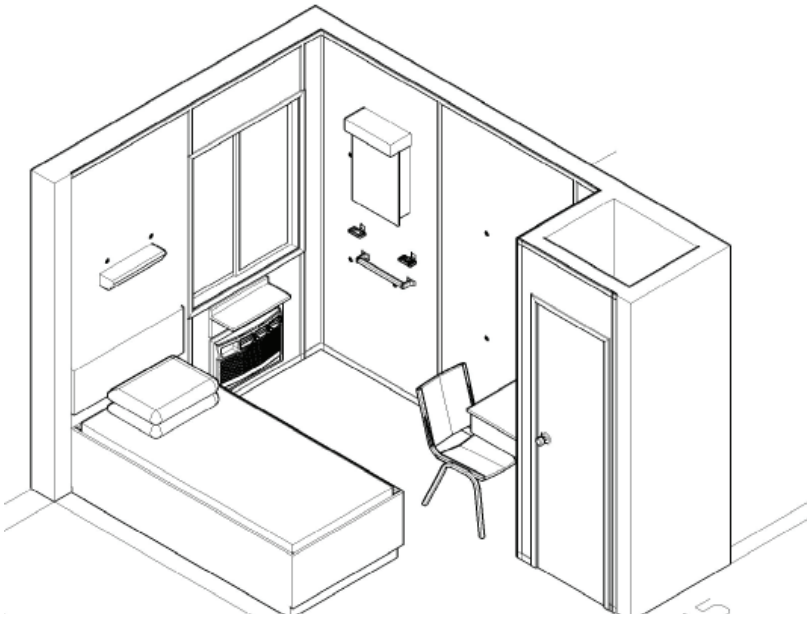
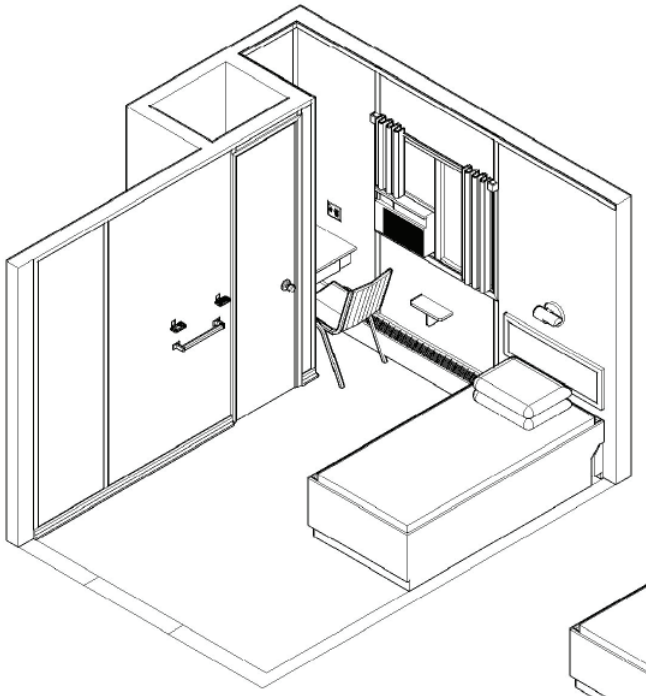


fig. (2.28) **[above & right]** axonometric drawings of Syncrude camp room configurations, showing basic layout and all furnishing (including twin bed, closet, fold-out desk, chair, wall mounted cabinet etc.)





Today's work camps are divided into two distinct categories: ***industrial*** *(*or *closed*) work camps, which are owned and operated by a single company and are typically positioned on – or adjacent to – the site of an operations facility; and ***commercial*** (or *open*) work camps which are owned and operated by a third party (generally a management services or logistics firm) and are typically located between clusters of large extraction projects or near future extraction sites. In general, room and board within *closed camps* is reserved for the day-to-day operations workforce of a particular extraction facility, while *open camps* cater largely to incoming construction and maintenance contractors who require a large number of rooms to be made available for the duration of a given employment contract. As the name suggests, the commercial camp is operated as a 'for profit' business enterprise which has emerged – only recently in the Oil Sands – in tandem with the escalating urban crisis in Fort McMurray. While in some cases Oil Sands employees are provided (in addition to their normal wages) a 'live out allowance' with which to secure room and board on an individual basis (either within a nearby 'open' camp or else within other temporary accommodations such as rental apartments or campgrounds), accommodations within open camps are more often factored into contract negotiations between the contractor and extraction enterprise and are seldom the financial responsibility of individual employees.

Despite the distinction, both *industrial* and *commercial* camps function in essentially the same way. Individual workers are flown or bussed (at company expense) into and out of the camp according to predetermined work rotations. Typical rotations differ between employers

fig. (2.29) **[right]** shift workers share a meal at the Cameco Rabbit Lake operations camp in northern Saskatchewan

fig. (2.30) **[right]** interior view of the cafeteria at Statoil's Leismer Lodge (camp reference #58 see pg. 146)





and job types, but most workers can expect a 10 day work week followed by a 4 day break. For those individuals who manage a longer commute (say, to the Maritime provinces or out of country) rotations commonly accommodate three week (14 days on, 7 days off) and four week (14 days on, 14 days off) cycles. Employees are not permitted to stay in camp during the 'off periods' of their rotations, and they are required to 'move out' of their room each time they rotate off of the job site. Rooms are never allocated to a single employee for the long term, instead new rooms are assigned each time a worker returns from their prescribed 'off rotation.'

It is this operational modality in particular that *Dominion* reporter Lindsay Bird identifies as one of the chief exploitative moments deliberately factored into camp operation:

> *The camps are not trying to emulate small towns. Rather, they reinforce a sense of estrangement from the immediate surroundings. . . . Due to intense overcrowding, many camps have adopted what is known as "hotel-style service." Employees check into a camp room for their shift and leave with all of their belongings at the end, effectively forcing them to live out of a suitcase. Company policy states that "this emphasizes that our workers are on-site to work", and not to establish any type of home within the camp.*[12]

Bird characterizes the condition of the modern camp worker using the phrase "institutionalized nomadicism;" concluding that the camps enforce a hyper delineation between the traditional live and work spheres:

12 Lindsay Bird, "Working Full Time: The work camps of Fort McMurray," *The Dominion* 48 (2007) www.dominionpaper.ca/articles/1383.

> *On the one hand, the camp functions as a refuge from* [the] *harsh elements of town life; but on the other, it subjects one to a totally unnatural way of living. Work is the focus of existence. As the "hotel-style" camps emphasize, life is something that happens when you're away from camp. What exists in camp, then, is a society defined by work and routine, out of touch with larger civilization.*[13]

By separating the 'live' and 'work' spaces to such an extreme (a quality unique to the camp in comparison to the '*company town*'), corporations manufacture a context which is singular in its focus on productive work.

Daily life within the camp is fairly straightforward. Workers *'check-out'* of the camp when their shift begins (either with an electronic key-card or by signing out with a security guard) and *'check-in'* again at the end of their work day. Shift work ranges from 10 to 12 hours; with longer shift work typically factored into rotations with longer *'off'* periods. Throughout the day company shuttle busses move workers between various work sites and nearby camps. The camp operator provides (or sub-contracts) facilities management, food services, janitorial staff, and security personnel (all of whom, incidentally, are also rotated in and out of camp on schedules similar to those of industrial workers) and ensures that the daily functioning of the camp meets the needs of its occupants. Residents are provided with three full meals a day which include two sit down meals and a self-serve station for bagged lunches. Typically, dormitories are cleaned once a day, sheets are changed once a week, and all wash facilities are cleaned twice a day. In larger camps a commissary keeps stock of items commonly misplaced or forgotten, and standard

fig. (2.31) **[right]** camp dorm room, interior image. photograph by: Ken Josuttes

fig. (2.32) **[right]** camp dorm room, interior image. photograph by: Ken Josuttes

13 Lindsay Bird, "Working Full Time," *The Dominion* (2007).





amenities include a lounge or bar which serves alcohol (within limited operating hours), a full-sized gymnasium or smaller weight room (which is open 24/7), and a rec area which commonly includes billiards and ping-pong tables. Workers can now expect private internet and telephone connections within their dorm rooms, and in some cases even a small personal television.

This is where sociological investigations of camp life – and its impacts, both psychological and physiological, on remote working populations – become complicated: the quality of a workers experience at camp can vary significantly across both camp operators and project sites. Recently the trend in camp construction has been a significant increase in amenity; particularly amongst open camps which have introduced a degree of competition to the otherwise autonomous production of company owned accommodations. As extraction operations in the region continue to expand, and workforce demand continues to increase, competition between oil sector employers has necessitated improvements to the traditionally thriftier closed camps – which have become a crucial factor in remote workforce retention. As a result, recent articles published in *The Edmonton Journal*, *The Globe and Mail*, and *Canadian Business* commend the construction of 'state of the art' camps, which their authors liken to upscale resorts and alpine lodges.[14] However, while high-speed internet connections, pay-per-view television, indoor ice rinks and gourmet menus

14 See: Brent Wittmeier, "Life in a northern work camp: Huge 'shadow population' of oil workers flies in, flies out," *The Edmonton Journal,* January 7, 2014; Nathan VanderKlippe, "Camp life: Oil sands camps go five-star," *The Globe and Mail*, September 15, 2010; and "New Regina work camp has a hockey rink and theatre," *Canadian Business,* April 2, 2012.

have become the new luxury in remote accommodations, this experience is still far from typical.

In a re-publication of the blogging exercise which resulted in his termination, electrician Mike Thomas describes his experience of two separate Oil Sands camps;

> *What we have is the absolute bare minimum that any company can get away with providing without having some kind of riot . . . We can't let our lives at work remain secret. How can anyone relate to us if all they think is that we go up north to some mystical place and come home with money? . . . There is a profound psychological and physical impact on a person from living in camps. Our stories should be well known and understood. We are people, not animals, and the least these companies can do for making BILLIONS off our labour is to treat us decently.*[15]

This characterization is not surprising considering – in particular – the exigencies of camp construction and the evidence (outlined in Part 1 of this thesis) linking the camp to an explicit economic agenda; chiefly, the re-organization of working populations into flexible or otherwise precarious arrangements. The very term 'camp' suggests an architecture which is transient; which provides only the most basic personal comforts; and which is only a stand in for more permanent accommodations. And yet, Oil Sands workers are finding that the camp is – without exception – an integral and indeed permanent part of their working lives, which has

15 Mike Thomas, "Writing about conditions in Suncor's Tar Sands work camps got me fired," www.*rabble.ca*, October 15, 2010 (www.rabble.ca/news/2010/10/writing-about-conditions-suncor's-tar-sands-work-camps-got-me-fired).

begun to cause the kind of friction exemplified by Thomas' blog posts.

The counterbalance to these complaints has been an overwhelming focus on the level of amenity and standard of quality exhibited by a new generation of camps. Of course, expensive camps are still camps. They continue to exclude the familial and social lives of working individuals while prioritizing a 'work only' atmosphere. They continue to disperse (rather than condense) the incoming working population. And they continue to isolate the indiviudal worker, who flies home at the end of each rotation and, as a result, struggles to forge strong social bonds with his or her colleagues.

Finally, it is important to mention that most work camps (both open and closed) enforce a code of conduct and require incoming workers to sign a 'rules and regulations' document before being assigned a room. Common stipulations include room-to-room visiting (and 'quiet') hours, dining room dress codes, and protocol to follow for inviting non-resident guests to camp (a privilege which security or management may override at their discretion). The camp operator reserves the right to 'suspend' (*evict*) any worker found to be in violation of such a document (especially in instances of substance abuse, physical altercations and vandalism), as well as the right to conduct individual room searches without advance notice. In an article for *The Rolling Stone* magazine, the restrictive living conditions at Wapasu Creek Lodge (the single largest camp complex in the Oil Sands) are described in some detail:

> *Wapasu is a dry camp, meaning absolutely no alcohol is allowed* [on site]. *Employees are bussed in and out of the fenced, guarded compound for work, and aren't allowed to leave or have visitors during off-hours. Meanwhile, all rooms are subject to search.*

There's nothing like coming home from a long day's work only to find a note stating drug-sniffing dogs searched your room while you were away.[16]

While company owned accommodations have always subjected the working population uniquely to the authority of their employers, it is clear that this relationship plays out with particular severity within the remote work camp.

03 [REGULATION]

Before transitioning into an investigation of the camp at a regional or urban scale, it is necessary to collect – briefly – those descriptions of the camp found within Provincial and other regulatory documents, which establish the base requirements to which present camps are upheld.

While in most provinces camp construction is regulated under Part 9 of the National or Provincial Building Code(s), the Alberta Code includes a unique section dedicated to industrial camps and their associated services. *Part 10: Relocatable Industrial Accommodation* regulates the construction of one or two storey buildings *"in which accommodation is provided for an industrial work force living and working*

16 "Undercover at the Tar Sands: What it's really like working for Big Oil," *Rolling Stone*, August 28, 2013 (www.rollingstone.com/politics/news/undercover-at-the-tar-sands-what-its-really-like-working-for-big-oil-20130828).

in a temporary location,"[17] and applies to *residential* as well as *personal service* and *low-hazard industrial* occupancy types (Groups C, D, and Group F Division 3, respectively).[18] Part 10 buildings are exempt from the '*scope of practice*' as established by the *Architects Act* and as a result the production of relevant drawings does not require the supervision or stamp of a registered architect.[19] Under this section of the Building Code the duration of a work camp is limited to five years (on a single site),[20] while the maximum acceptable gross building area relative to Part 9 (and other areas of the code not regulated by the Architects Act) is effectively doubled: from three-hundred to six-hundred square metres (for Group C occupancies) and from five-hundred to twelve-hundred square metres (for occupancy groups D and F).[21]

These observations render the ambition of Part 10 (in relation to the remainder of Building Code) quite clear; by allocating a specific subsection of the code for the regulation of industrial camps, the scope of regulation has broadened (in the particular case) to include the construction of larger buildings than are otherwise permitted by Part 9. Alberta's Building Code thus grants building contractors in the province a certain autonomy in constructing camps of a predetermined size, provided they are explicitly temporary and/or mobile.

Of course, Part 10 fails to address the now prevalent deployment of massive camp complexes (such as Civeo's *Wapasu Creek Lodge*,

17 Alberta Building Code, 2006 (Volume 2 Division B 10.1.1.2).

18 Ibid.

19 Architects Act (RSA 2000 Ch A-44) Section 2.

20 Alberta Building Code, 2006 (Volume 2 Division B 10.1.1.5).

21 For a comprehensive list of required areas refer to: Alberta Building Code, 2006 (Volume 2 Division B 10.1.1.3).

CNRL's *MacKay River Lodge*, and Shell's *Albian Village*) which house thousands of workers on a single site in clusters of three storey barrack blocks. Depending largely on their conformity to a variety of criteria (primarily fire safety regulations), these larger camps are regulated by the Building Code in addition to the relevant acts governing the practices of Architecture and Engineering.

In addition to the building code, regulations pertaining to the operation and maintenance of work camps have been included within the Province's *Public Health Act*. The act describes a work camp as;

> *". . . one or more buildings established to accommodate persons who are employed in mining, lumbering, construction, drilling, resource exploration or any other similar industry, and includes the land on which the building or buildings are situated."*

and further defines a building (for the purposes of the Work Camps Regulation) as;

> *". . . any permanent or temporary structure, tent, vehicle or mobile unit used for recreation or accommodation for persons working or residing at a work camp, or for the storage, preparation or serving of food at a work camp."*[22]

In contradistinction to the definition supplied by the Building Code, the Public Health Act seeks to include all industrial camps under a single

22 Public Health Act, Work Camps Regulation (Alta. Reg.218/02)

heading which captures everything from informal tent and trailer sites to massive prefabricated camp complexes. Essentially, the *Work Camps Regulation* portion of the Public Health Act establishes guidelines for the upkeep and quality of individual camps (including, among other things, their cleanliness and sanitation, the upkeep of dormitory furnishings, and the regular washing of linens and bedding) and contains critical directives regarding the provision of potable water, the disposal of sewage and the accumulation of garbage on site which, in general, require consultation with the relevant public health authority on an individual project basis.

Finally, the *Building Trades of Alberta and Construction Labour Relations Association* have drafted a policy agreement which ensures a certain standard of camp quality for members of their affiliated trade unions.[23] The *Construction Camp Rules and Regulations* document is meticulously detailed and provides specific direction regarding (among a long list of additional items): the appropriate size of a workers room (not less than 80 sf); sound proofing between living quarters; the provision of fixtures and furnishings (which include basic dimensions for all millwork); and even appropriate menu items for camp dining facilities.[24] The document also introduces base ratios between the number of camp occupants and various wash fixtures (e.g. 1 shower to 11 occupants, 1 toilet to 15 occupants, and 2 washers/3 dryers to 49 occupants).[25] Most importantly the Camp Rules and Regulations agreement (while voluntary) establishes binding contract

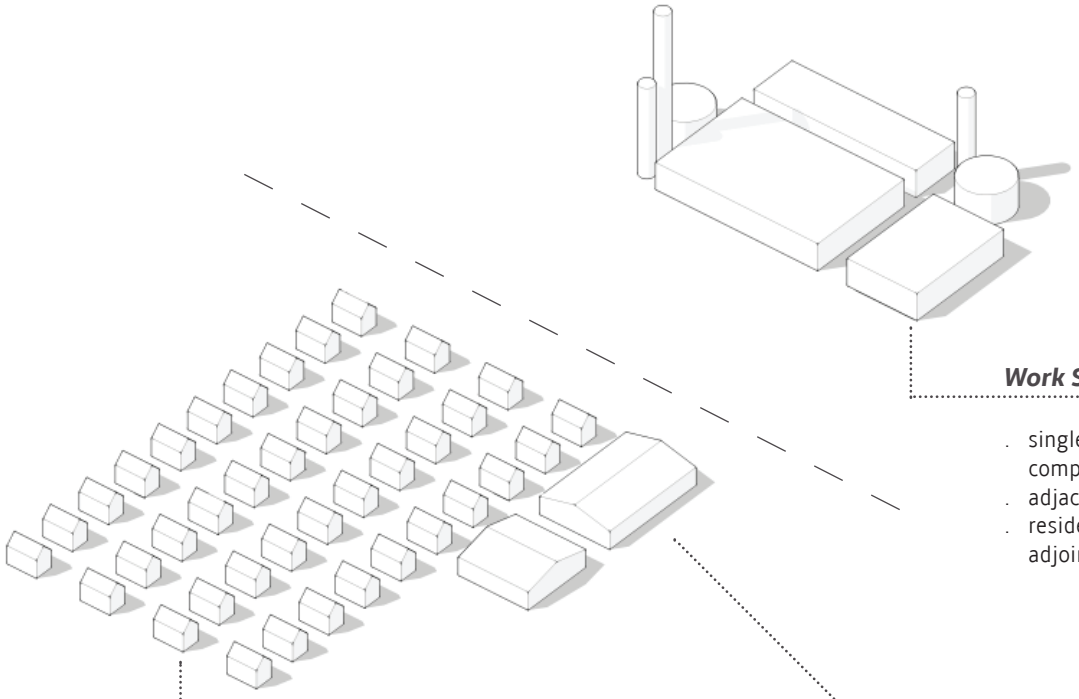
23 "Construction Camp Rules and Regulations: For construction camp accommodations," *Building Trades of Alberta* (2011-2018), accessed January 1, 2015 (www.ualocal179.com/member_agreements.php).

24 Ibid.

25 Ibid.

between the camp owner/operator and the trade unions and outlines (a) the selection of a Review Committee for camp oversight and (b) a process for dispute resolution should the expectations of the agreement not be upheld.

In practice, only a fraction of the collective Oil Sands workforce is captured within the bounds of this agreement (which does not include any workers employed directly in the day-to-day operations of extraction facilities). Nonetheless, adherence to such a document offers a crucial example of the self-organizational power of labour groups within the present camp model, and provides (in addition to the Building Code and Public Health Act) a base case which can be used in the assessment of both present and future camps.



Work Site

- single production facility (the owner and operator of the company town)
- adjacent to (but removed from) the company town site
- residents of the company town work exclusively for the adjoining industrial facility

Commercial & Institutional

- industry typically invests in the creation of institutional buildings within the town site (e.g. places of worship, elementary schools)
- commercial functions naturally emerge, whether owned by the corporation or initiated by individuals outside company employment

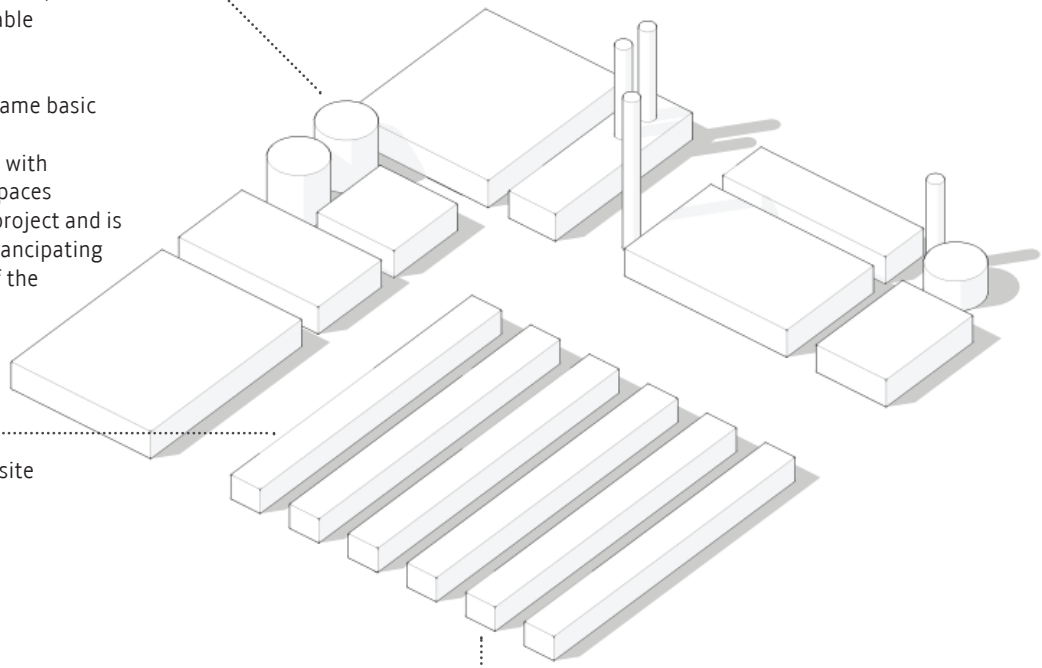
Housing

- individual company owned plots of detached housing (which are commonly leased to employees)
- incorporates the family unit and encourages semi-permanent or permanent inhabitation

Work Site

- as workable extraction sites are exhausted of natural resources, the industrial project moves farther afield, demanding a habitable environment which is increasingly insular

- the 'company town' becomes one of two iterations of the same basic architectural typology:
  1. the camp is incorporated into the industrial project with absolutely no separation between the live & work spaces
  2. the camp is entirely separated from the industrial project and is operated (for profit) by a third party; effectively emancipating the problem of housing from the responsibilities of the corporation



Commercial & Institutional

- all institutional program is externalized / relegated to the site of permanent inhabitation
- any necessary commercial functions are absorbed into the construction of the camp (generally limited to a company owned 'general store' containing basic necessities)

Housing

- barrack-style buildings containing multiple 'single occupant' residences
- single room allocated to each individual employee
- shared amenity spaces (lounge, cafeteria, etc.)
- a temporary domestic circumstance (the worker maintains a permanent home 'elsewhere')
- necessitates a cyclical or rotational based working scheme





03 | CATALOGUE

The camp site on the frontier still delimits material advance in Canada. The man of the bunkhouse is ever found on the vanguard, he occupies the outposts. Trench by trench he assays the ramparts in nature's fastness. . . . Too long the great hinterland has been but an inset on the maps. The tasks there performed are for the enhancement of the whole people.

– Edmund W. Bradwin, *The Bunkhouse Man*

PURPOSE

While it is not clear *why* there has been no attempt to document and analyze the developmental footprint associated with the emergence (and prioritization) of *'migrant'* or *'transient'* work, it is clear that a purely statistical representation is severely limited in its capacity for describing the phenomenon of *flexible work* writ large. Crucial questions regarding *how* and *where* workers are situated, the architectures they inhabit, and the social and domestic lives of migrant workers (relative to a 'permanent' or 'resident' workforce) have – for far too long – remained unanswered.

The following section endeavours to expand on these questions via a detailed mapping of the industrial territory which includes an exhaustive accounting of work camps, their respective locations and population sizes, and their distribution relative to both industrial activities and permanent communities. The completed catalogue dismantles prevalent assumptions about the camp (largely based on isolated case studies) which fail to conceive of the archetype as ***(a)*** a permanent fixture within the industrial territory, and ***(b)*** an organizational paradigm distinct from the 'company town' typology, which is ***(c)*** particular to the present mode of capitalist production and thus representative of a global imperative.

METHODOLOGY

The catalogue is divided into five distinct geographic areas which surround the communities of Fort MacKay, Fort McMurray, Anzac, Conklin and Wabasca-Desmarais (*see key drawing, next*). These areas have been sized and selected based on the need to: ***(a)*** present information at a relevant and readable scale, ***(b)*** inscribe all of the camps currently operational within the Athabasca Region, and ***(c)*** provoke a continuing dialogue about camps *in relation to* the pre-existing permanent communities from which working populations have been theoretically liberated.

Each area study is divided into three sections: ***(1)*** a summary of the geographic area including relevant information about permanent communities and first nations settlements, the boundaries of active and approved industrial projects, transport infrastructures and, finally, the locations of work camps; ***(2)*** an accounting of individual work camps which includes a satellite image of each complex, its precise geographic location, accommodations capacity and owner/operator information; and ***(3)*** a brief analysis which condenses this data into a population distribution diagram demonstrating the demographic impact of camps spatially at a regional scale.

Camps have been located, tagged and documented using a combination of satellite imagery (from both 'Bing' and 'Google' maps), information made available on public owner/operator webpages, and public documentation provided by the Wood Buffalo planning department and/or relevant provincial advisory boards. Where possible, each entry in the catalogue provides an 'info' link which connects to source material as well as to additional information on each camp.

LIMITATIONS

Of course, detailed information is not available for all of the camps recorded herein. In some cases (where the number of rooms is preceded by the '~' symbol), the maximum accommodations capacity of an individual camp has been estimated based on its approximate size and the number of 'sleeper units' apparent form the satellite imagery.

While the ambition of the catalogue is to construct an exhaustive mapping of work camps (and thereby assert the importance of the camp as an extra-urban paradigm), it is inevitably incomplete. Many corporations have not made information about their private camp complexes public, which has made it difficult to locate and quantify some camps. In addition, camps are often erected and disassembled within a short time frame; particularly the smaller exploratory and construction camps which can escape detection by satellite image. Finally, the intended duration of a given camp varies significantly from site to site; which means that, in general, it is hard to predict for how long a localized population of migrant workers will remain in one spot. More often than not, the size of a camp provides some suggestion as to its intended permanence – the larger the camp, the more likely that it is a permanent installation – and as such, the camps missing from this investigation are likely to be smaller, more transient structures, which would have little overall effect on the analysis that follows.

LOOKING FORWARD

A crucial 'next step' in spatializing the phenomenon of flexible work is to add a temporal dimension to the mapping exercise conducted here. Unfortunately, the information necessary to construct an evolutionary mapping of camp deployment – over a period of years – is not available. Relevant dates noting the construction and deconstruction of various camp complexes (as well as alterations – expansions/contractions – of existing camps) are conspicuously missing from documentation available at both the Municipal and Provincial levels. Such information would reveal significant qualities about the adoption of flexible work in the Oil Sands. How precisely has the camp footprint been expanding over the last decade? Which areas have been targeted for population expansion and at what times? How has the extra-urban footprint responded to fluctuating workforce demand in times of economic prosperity/austerity? These questions, among others, could be addressed by the careful maintenance of a spatial data-set over the long term.

For now, it must suffice to provide something of a 'snapshot;' an instantaneous representation of the industrial footprint in its current form, which – as a flexible urbanism – is bound to change. It will be useful to consider the current 'camp catalogue' as a foundation upon which an elongated investigation might continue and as a critical frame of reference for future investigations of the industrial territory.

CATALOGUE KEY

NOTE: The grouping of project boundaries to the west of Areas 1 & 2 has only recently been granted developmental approval by the Province of Alberta. As industrial activities have yet to begin, there are (as yet) no camps associated with these work sites. It is for this reason that the area has not been allocated a unique portion of the 'camp catalogue.' Future studies will likely include these areas as the initial phases of construction begin.

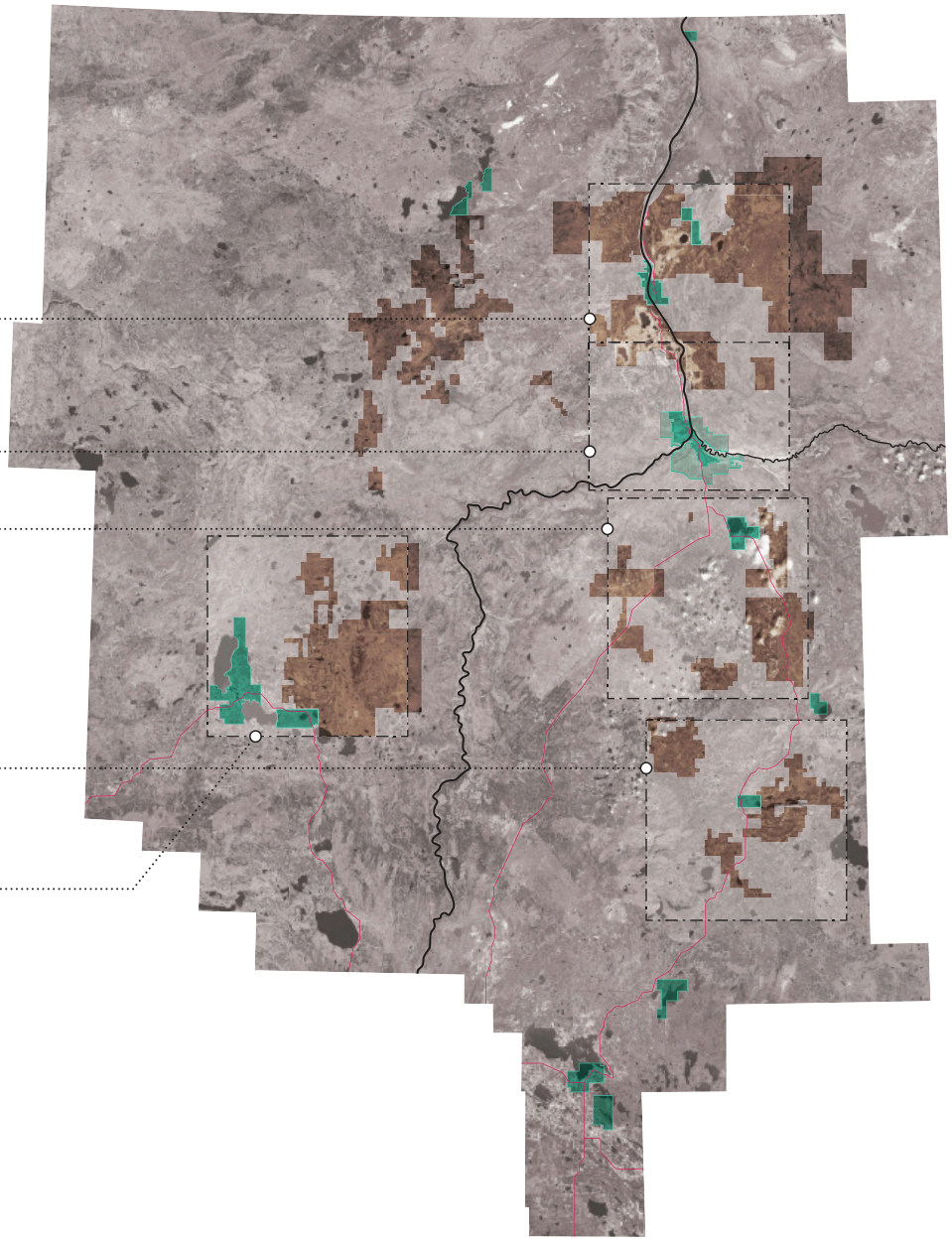
AREA 1 | **Fort MacKay**

AREA 2 | **Fort McMurray**

AREA 3 | **Anzac**

AREA 4 | **Conklin**

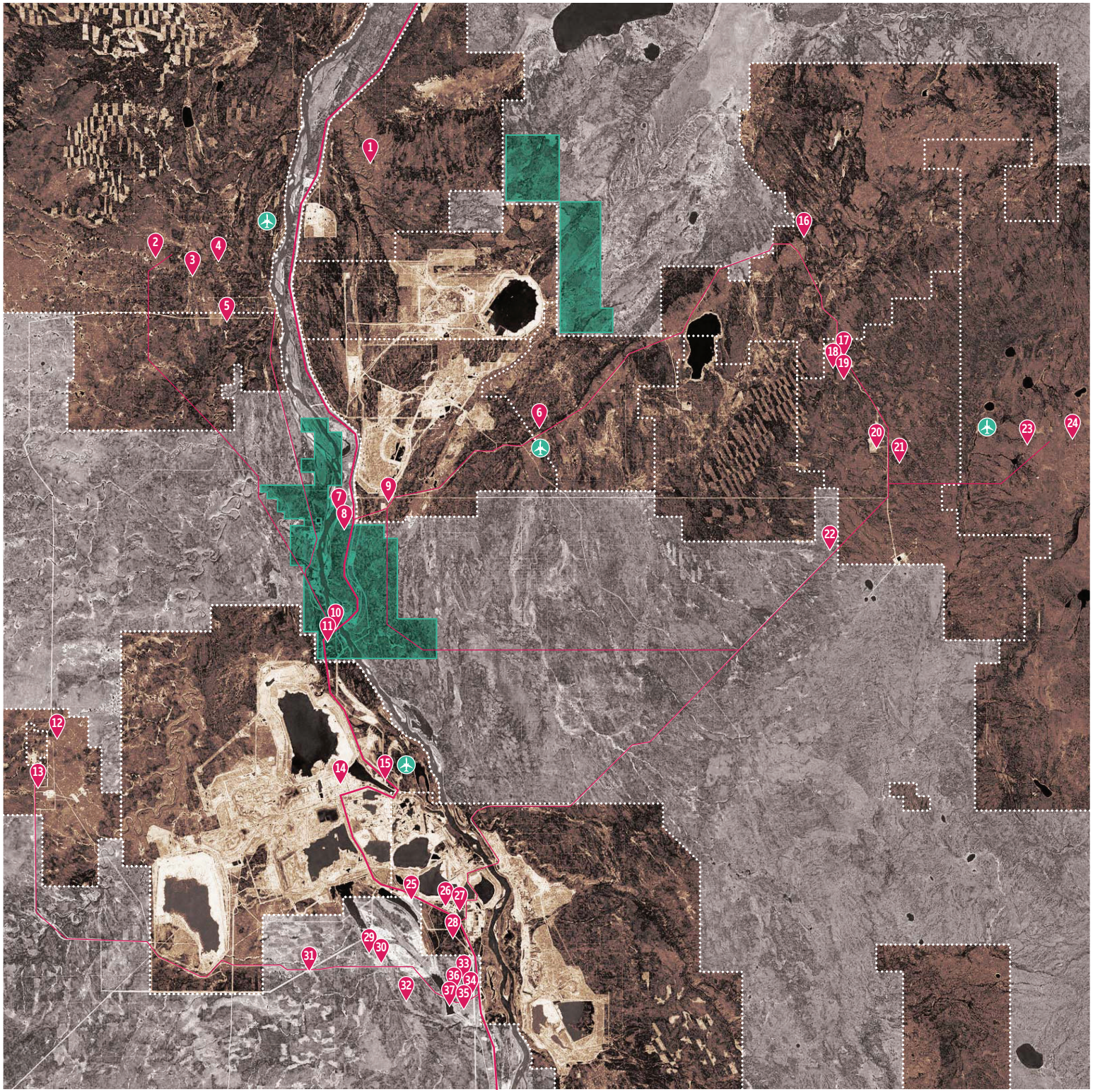
AREA 5 | **Wabasca-Desmarais**



OIL SANDS PROJECT BOUNDARY

PERMANENT COMMUNITY

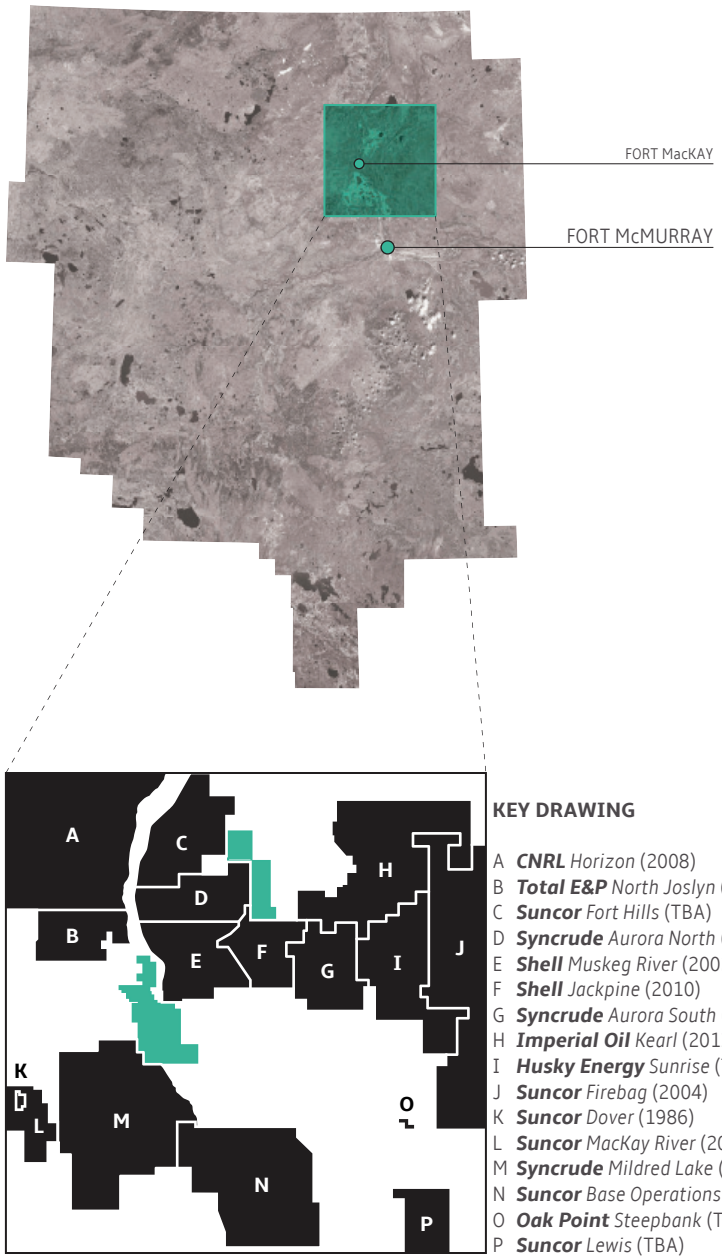
0 km 50 km 100 km 200 km



AREA 1 | FORT MACKAY

20 km
5 km
0 km

OIL SANDS PROJECT BOUNDARY
PERMANENT COMMUNITY
WORK CAMP LOCATION
AIRPORT / AERODROME



KEY DRAWING

A ***CNRL*** *Horizon* (2008)
B ***Total E&P*** *North Joslyn* (TBA)
C ***Suncor*** *Fort Hills* (TBA)
D ***Syncrude*** *Aurora North* (2001)
E ***Shell*** *Muskeg River* (2002)
F ***Shell*** *Jackpine* (2010)
G ***Syncrude*** *Aurora South* (TBA)
H ***Imperial Oil*** *Kearl* (2013)
I ***Husky Energy*** *Sunrise* (TBA)
J ***Suncor*** *Firebag* (2004)
K ***Suncor*** *Dover* (1986)
L ***Suncor*** *MacKay River* (2002)
M ***Syncrude*** *Mildred Lake* (1978)
N ***Suncor*** *Base Operations* (1967)
O ***Oak Point*** *Steepbank* (TBA)
P ***Suncor*** *Lewis* (TBA)

FORT MACKAY | SUMMARY

LOCATION:	(57.1817, -111.6365)
POPULATION:	562
AREA:	8.2 km^2

Nearly 60 kilometres north of Fort McMurray is the hamlet of Fort MacKay and the Treaty 8 agreements 174D and 174C of the Fort McKay First Nation. Together these communities accommodate a permanent population of approximately 550 individuals;[1] of whom an overwhelming majority (93%) identify as First Nations Canadian.[2]

The sixteen extraction projects illustrated in the area surrounding Fort MacKay (left) produced a total of 72.65 million cubic metres of oilsand based product in 2013; and account for approximately 70% of all Oil Sands production.[3] Translated, this figure is equivalent to 610 million barrels of oil annually or an average of 1.67 million barrels per day.

New projects north and east of Fort MacKay have necessitated the construction of massive commercial camps, which accommodate thousands of employees on isolated worksites far from Fort McMurray and its associated services. These camps have set the precedent for accommodating workforce growth across the whole Oil Sands territory.

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1 *Population and Dwelling Counts 2011 and 2006 censuses*, Statistics Canada, 2011 (www12.statcan.gc.ca/census-recensement/2011/dp-pd/hlt-fst/pd-pl/index-eng.cfm).

2 *2012 Census: Demographic Profile*, Regional Municipality of Wood Buffalo, 2012 (www.woodbuffalo.ab.ca/Municipal-Government/ Municipal-Archived-Census-Reports.htm), 57.

3 *Oil Sands Projects Production History Graph*, Alberta Energy Regulator: Oil Sands Information Portal, accessed May 7 2014 (www.osip.alberta.ca/library/Dataset/Details/45).



1. **Suncor Fort Hills** (57.3953, -111.5764)

Rooms:	1 500
Type:	Closed
Operator:	Suncor

Notes:

Satellite image shows construction of the central facility (dining hall, common spaces, etc.) near completion, with sleeper trailers deposited on the northern portion of the site. Pile foundations to the left and right of the central building describe the geometry of dormitory wings yet to be assembled.

Info:

www.rcmmodular.com/workforce-accommodations/Oil-and-Gas/



2. **MacKay River Lodge** (57.3374, -111.7831)

Rooms:	2 596
Type:	Closed
Operator:	CNRL / Poplar Creek Camps & Catering

Notes:

The building to the left of the site (with blue roofing) is either a massive expansion phase of the existing camp, or a new camp altogether (which does not yet appear to be factored into the room numbers for MacKay River Lodge). Judging by the size of the new building at least 750 rooms have been added to Horizon's project site (nonetheless, these rooms are not factored into the population count contained in the present study). The outline of a baseball diamond is visible in the south-west corner of the project site.

Info:

www3.telus.net/kcconcepts/ESSProjectDescriptions.pdf

www.cnrl.com/upload/multi_media_element/67/03/welcome-package-2013.pdf

3. **Calumet River Lodge** (57.3289, -111.7569)

Rooms:	2 178
Type:	Closed
Operator:	CNRL / Poplar Creek Camps & Catering

Info:

www3.telus.net/kcconcepts/ESSProjectDescriptions.pdf

www.cnrl.com/upload/multi_media_element/67/03/welcome-package-2013.pdf



4. **Chelsea River Lodge** (57.3322, -111.7347)

Rooms:	2 008
Type:	Closed
Operator:	CNRL / Poplar Creek Camps & Catering

Info:

www3.telus.net/kcconcepts/ESSProjectDescriptions.pdf

www.cnrl.com/upload/multi_media_element/67/03/welcome-package-2013.pdf







5. **Joslyn Creek Lodge** (57.2984, -111.7339)

Rooms:	520
Type:	Open
Operator:	Clean Harbors

Notes:

Joslyn Creek is an open camp servicing incoming construction contractors for Total E & P's *North Joslyn* project, which is not scheduled to begin producing commercially until 2020. At 520 rooms, the camp does not anticipate peak construction and operations staff (as suggested by the 1,500 room camps located on neighbouring project sites). Should the project move forward according to plan, a series of larger camps on (or near) this site will be required in the near future.

Info:

www.evereadyindustrial.com/locations/index.asp?id=384



6. **Albian Village** (57.2435, -111.4045)

Rooms:	2 460
Type:	Closed
Operator:	Shell / ATCO Structures & Logistics

Notes:

Three storey sleeper blocks connect to the central building via a series of raised walkways, which allow traffic to pass beneath. East of the main camp is the original construction camp (gray roofing) which is currently reserved for 'overflow' during peak demand. Shell's *Albian Sands* production facilities can be seen south of the camp.

Info:

www.atcosl.com/en-ca/Projects/Albian-Village

7. **Creeburn Lake Lodge** (57.2018, -111.5999)

Rooms:	861
Type:	Open
Operator:	Creeburn Lake / ATCO Structures & Logistics

Info:

www.atcosl.com/en-ca/ATCO-Lodge/Creeburn-Lake-Lodge/

8. **Barge Landing Lodge** (57.1960, -111.6084)

Rooms:	1 834
Type:	Open
Operator:	Barge Landing / ATCO Structures & Logistics

Notes:

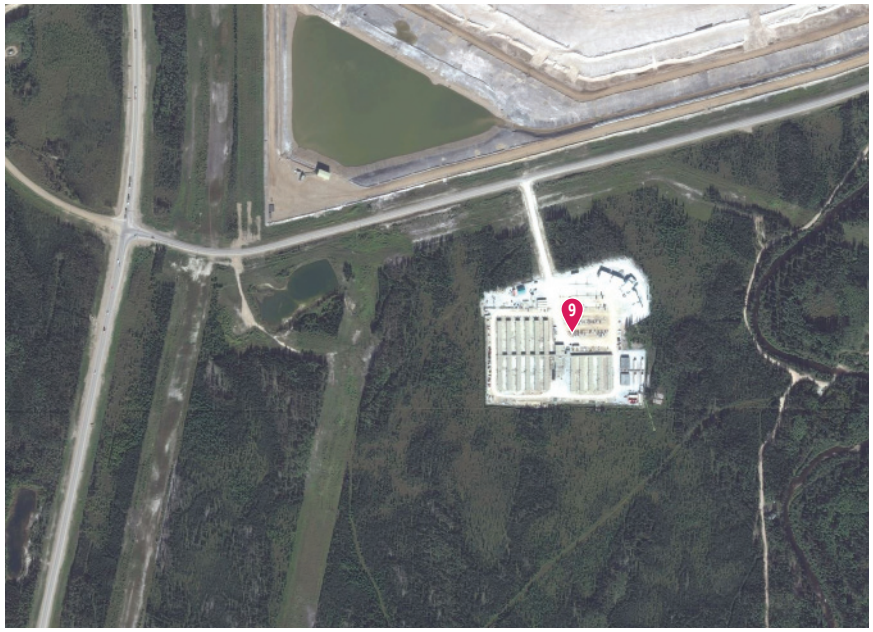
Both the Creeburn Lake and Barge Landing camps are partnership projects between ATCO Structures & Logistics and the Fort McKay First Nation, who participated in the construction of the two facilities and continue to be involved in day-to-day operations of both camps.

Info:

www.atcosl.com/en-ca/ATCO-Lodge/Barge-Landing/



0 m *250 m* *500 m* *1000 m*



9. **Oilsands Industrial Lodge** (57.1931, -111.5812)

Rooms:	592
Type:	Open
Operator:	Clean Harbors

Info:

www.cleanharbors.com/browse_by_service/lodging_services/open_lodges.asp



10. **Athabasca Lodge** (57.1282, -111.6177)

Rooms:	2 005
Type:	Open
Operator:	Civeo (PTI Group)

Notes:

Visible between Athabasca Lodge and Beaver River is an outdoor driving range, a unique amenity amongst Oil Sands camps. To the west of the camp site is the continuation of Hwy. 63, which extends north past Fort McKay; east of the Athabasca River.

Info:

www.civeo.com/lodges-villages/canada/athabasca-lodge/

11. **Beaver River Executive Lodge** (57.1245, -111.6203)

Rooms:	876
Type:	Open
Operator:	Civeo (PTI Group)

Info:

www.civeo.com/lodges-villages/canada/beaver-river-executive-lodge/

12. **MacKay River MRX Camp** (57.0627, -111.8993)

Rooms:	~ 30
Type:	Closed
Operator:	Suncor

Notes:

Camp belongs to Suncor's MRX pilot project. Presumably, this camp can be considered temporary until a decision is made to either expand or cancel the pilot.

Info:

N/A



13. **MacKay River Lodge** (57.0428, -111.9151)

Rooms:	~ 100
Type:	Closed
Operator:	Suncor

Info:

N/A



0 m *250 m* *500 m* *1000 m*



14. **Mildred Lake Village** (57.0429, -111.6065)

Rooms:	2 000
Type:	Closed
Operator:	Syncrude

Notes:

Portions of Syncrude's Mildred Lake Village remain the oldest of any Oil Sands camps currently in operation. The camp was erected during the mid-70's construction of the Mildred Lake project and has been in continuous operation ever since.

Info:

www.boilermakers.ca/content/images/stories/docs/syncrude_turnaround_pkg.pdf



15. **PTI Lakeside Lodge** (57.0465, -111.5627)

Rooms:	510
Type:	Open
Operator:	PTI

Notes:

Shown north of the camp is Syncrude's private airstirp at Mildred Lake, which is – among other things – used to fly workers in and out of the project site.

Info:

www.civeo.com/lodges-villages/canada/lakeside-lodge/

16. **Kearl Lodge** (57.3456, -111.1254)

Rooms:	294
Type:	Closed
Operator:	Imperial Oil / Clean Harbors

Info:

www.cleanharbors.com/browse_by_service/lodging_services/closed_client_lodges.html



17. **Husky Sunrise Lodge** (57.2838, -111.0958)

Rooms:	120
Type:	Open
Operator:	ATCO Structures & Logistics

Info:

www.atcosl.com/en-ca/Projects/Husky-Sunrise-Lodge-Operations







18. **Henday Lodge** (57.2772, -111.1057)

Rooms:	1 698
Type:	Open
Operator:	Civeo (PTI Group)

Info:

www.civeo.com/lodges-villages/canada/henday-lodge/

19. **Wapasu Creek Lodge** (57.2714, -111.0957)

Rooms:	5 174
Type:	Open
Operator:	Civeo (PTI Group)

Notes:

At just over five thousand rooms, Wapasu Creek Lodge is currently the largest camp in the Oil Sands. The extent of site preparation indicated by the satellite image suggests the intent to continue increasing accommodations capacity on this site in the near future. As approved project leases nearby enter the development process, Civeo's massive camp complex will be well situated to accommodate necessary construction workforces.

Info:

www.civeo.com/lodges-villages/canada/wapasu-creek-lodge/

20. **Sunrise Camp** (57.2322, -111.0527)

Rooms:	1 500
Type:	Open
Operator:	Lighthouse Camp Services Ltd.

Info:

www.lighthousecampservices.ca/sunrise-camp/



21. **Pebble Beach Lodge** (57.2248, -111.0224)

Rooms:	432
Type:	Closed
Operator:	Civeo (PTI Group)

Info:

www.civeo.com/lodges-villages/canada/pebble-beach-lodge/





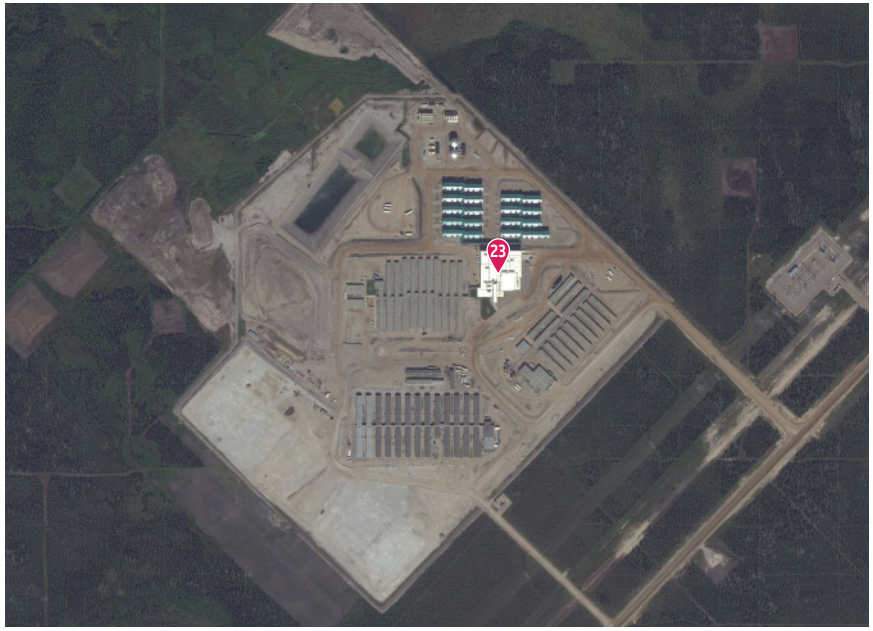


22. **Red Clay Lodge** (57.1729, -111.1170)

Rooms:	255
Type:	Open
Operator:	Horizon North Camps & Catering

Info:

www.hncampsandcatering.horizonnorth.ca/index.php/main/content_page/70



23. **Suncor Firebag Village** (57.2360, -111.8949)

Rooms:	1 750
Type:	Closed
Operator:	Suncor

Info:

www.suncor.com/en/working/4611.aspx

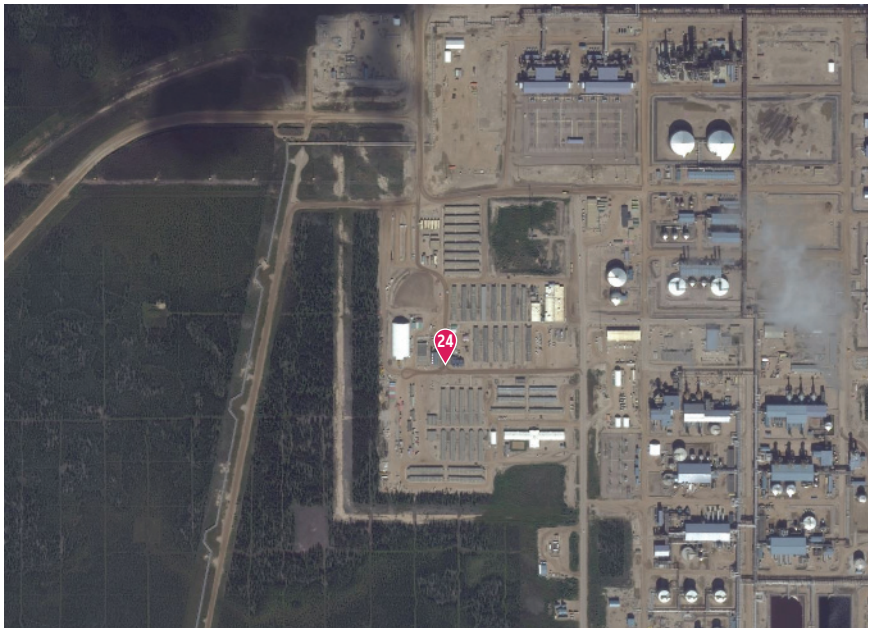
www.bird.ca/Projects/project-suncor_firebag_camp_core.html

24. **Suncor Caribou Lodge** (57.2366, -110.8594)

Rooms:	1 696
Type:	Closed
Operator:	Suncor

Info:

www.suncor.com/en/working/4601.aspx



0 m *250 m* *500 m* *1000 m*

FORT MACKAY | ANALYSIS

TOTAL CAMP CAPACITY:	32,989	
OPEN:	15,945	(48 %)
CLOSED:	17,044	(52 %)
PERMANENT POPULATION:	~ 750	

Together the 24 camps included in the Fort MacKay study (see note, bottom right) accommodate a maximum of nearly 33 thousand migrant employees; that represents half (48%) of the total camp accommodations capacity for the entire Athabasca Region, and equivalent to nearly half of the recorded permanent population of the Regional Municipality of Wood Buffalo. These rooms are evenly split between *open* (third party) camps available to the employees of any local project and *closed* (private, company operated) camps which are reserved for the workforce of a particular operations facility.

In general, camps are positioned with access to regional transport routes and are overwhelmingly located along Highway 63, which passes through Fort McMurray and connects the Oil Sands region to the City of Edmonton. Recently, private company aerodromes – which allow oil operators to circumvent congested land routes for the purposes of routine supply and movements of migrant employees – have become integral to the region's operations infrastructures. Aerodromes associated with CNRL's *Horizon* mine, Shell's *Albian Sands*, Suncor's *Firebag* (to the northeast) as well as Syncrude's *Mildred Lake* project suggest that the construction of private airstrips and the use of chartered flights has become an imperative for the largest Oil Sands operations and are, crucially, an indication of industry's autonomy from established urban areas like Fort McMurray (which is no longer a necessary portal for the transport of goods and personnel).

The MacKay study is unique in providing an illustration of Oil Sands development at its most mature, and alludes to the size and distribution of developed work forces as younger areas of the resource territory approach production capacities comparable to the open pit mines surrounding the hamlet. In the investigation areas that follow – specifically those surrounding Anzac, Conklin and Wabasca – future development will almost certainly follow the precedent set by the projects in Fort MacKay, with larger camps emerging to accommodate migrant workers in lieu of permanent developments to neighbouring communities.

POPULATION KEY

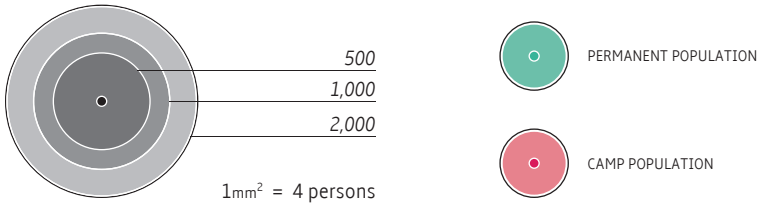
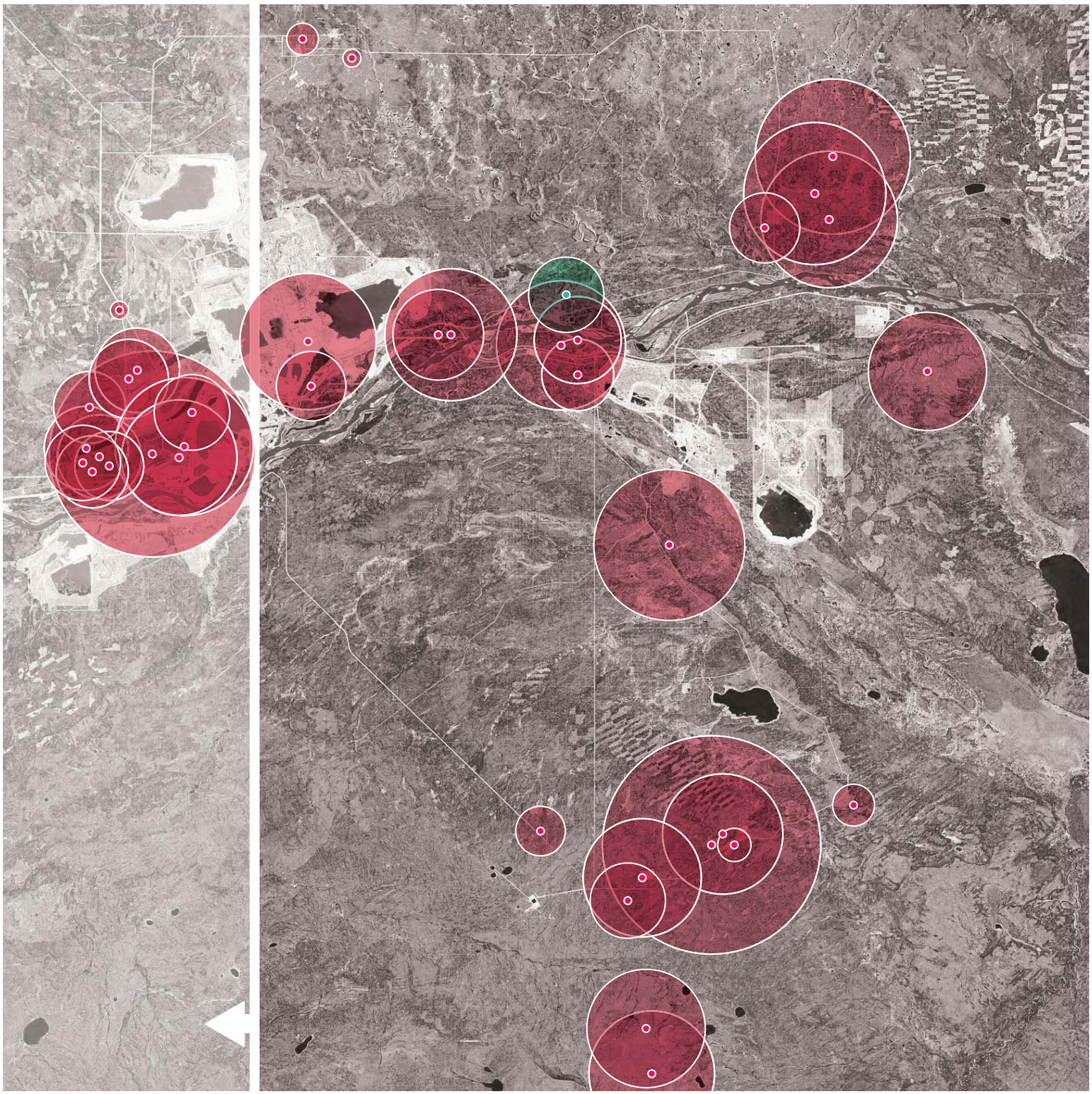


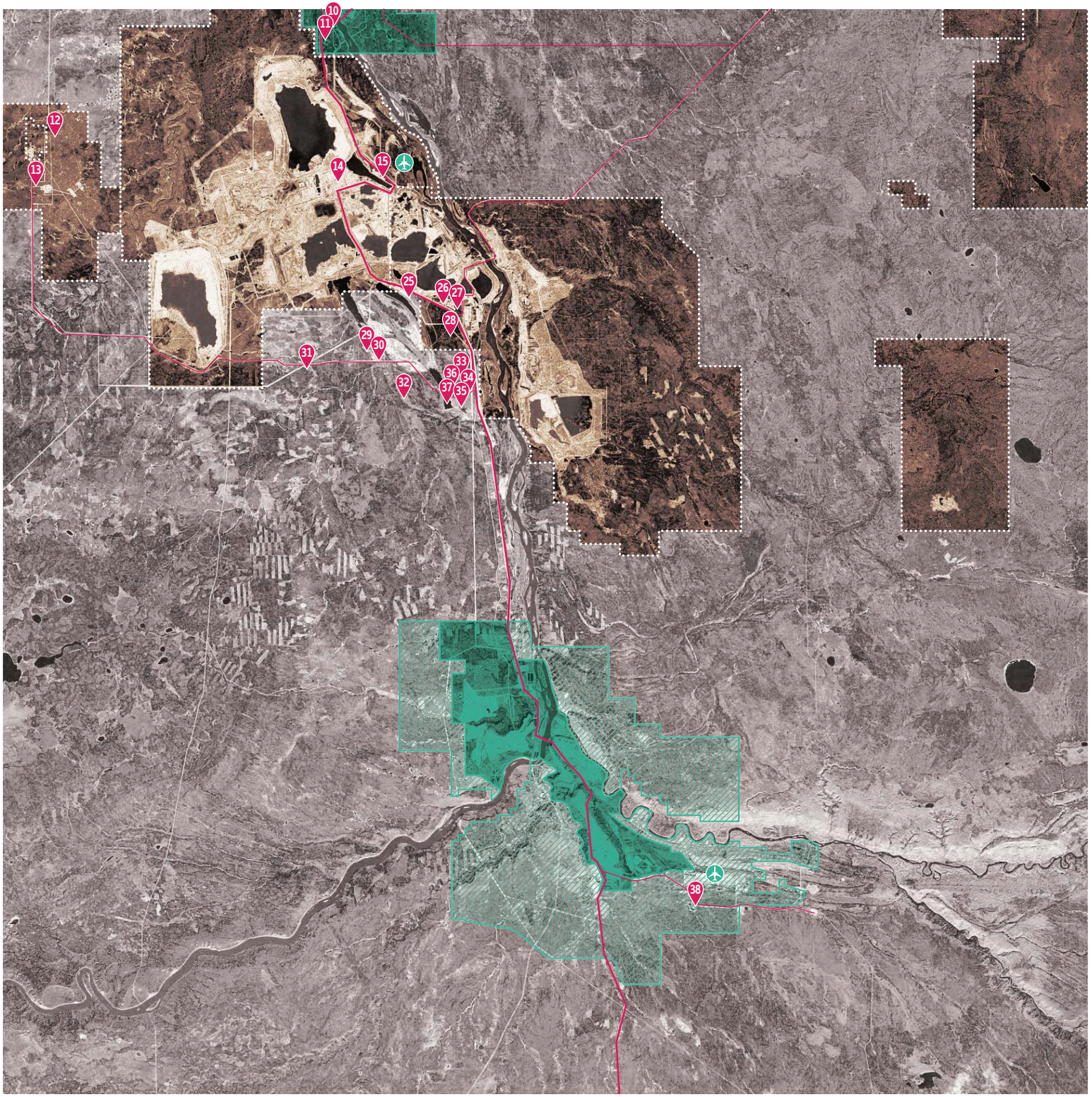
Fig. (3.04) **[right]** Fort MacKay Population Distribution: Camp capacities are illustrated in red, while permanent communities are shown in green. The area inscribed by each circle corresponds to the population capacity at each individual site (see key drawing above).

NOTE: Camps drawn within the tinted section (#'s 25 – 37, right) are included in the Area 2 – Fort McMurray portion of the camp catalogue, and are not (for the sake of clarity) included in the accommodations tally for Area 1 – Fort MacKay (top left).

0 km 5 km 20 km

AREA 1 | POPULATION DISTRIBUTION

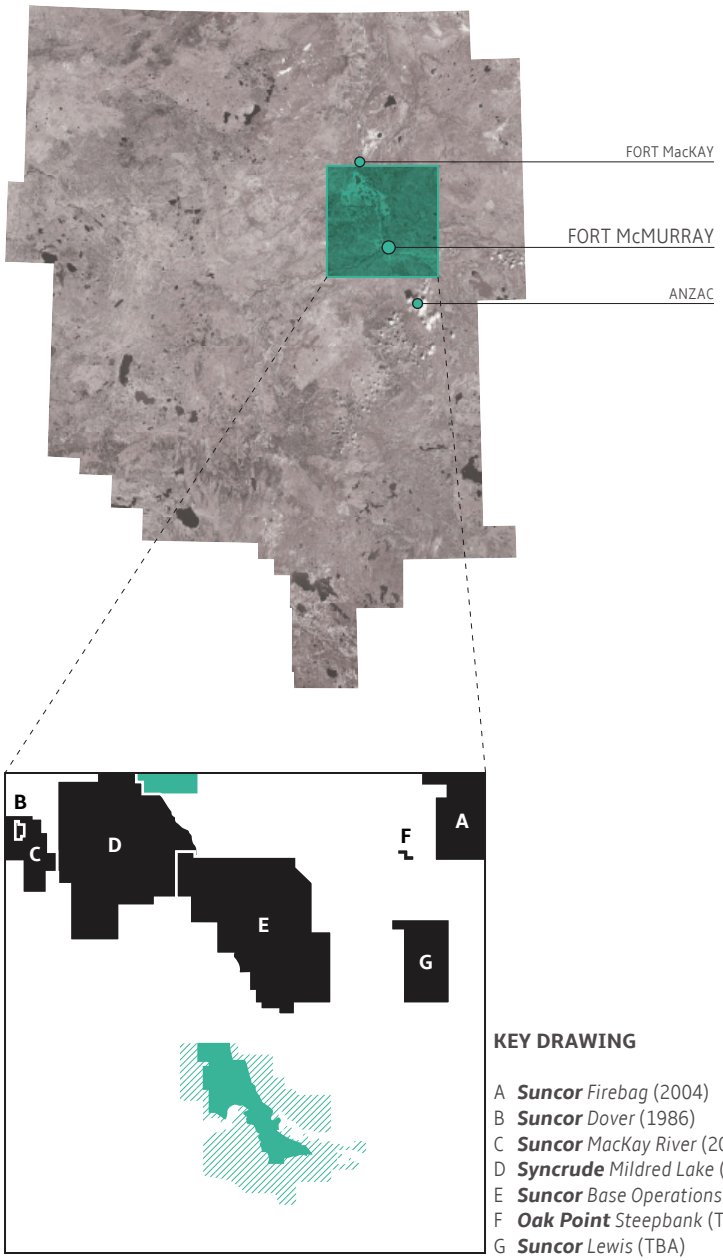




AREA 2 | FORT McMURRAY

20 km
5 km
0 km

OIL SANDS PROJECT BOUNDARY
PERMANENT COMMUNITY
WORK CAMP LOCATION
AIRPORT / AERODROME



KEY DRAWING

A ***Suncor*** *Firebag* (2004)
B ***Suncor*** *Dover* (1986)
C ***Suncor*** *MacKay River* (2002)
D ***Syncrude*** *Mildred Lake* (1978)
E ***Suncor*** *Base Operations* (1967)
F ***Oak Point*** *Steepbank* (TBA)
G ***Suncor*** *Lewis* (TBA)

FORT McMURRAY | SUMMARY

LOCATION:	(56.7178, -111.3629)
POPULATION:	72,944
AREA:	59.9 km^2

Fort McMurray is located ~450 kilometres north of Edmonton, at the confluence of the Athabasca and Clearwater Rivers. Since the inauguration of the first commercial oil projects in the late 60's and 70's, Fort McMurray has grown – from a community of less than 1 thousand people – to accommodate nearly 75 thousand permanent residents[1] and is widely considered the operational centre of Oil Sands activities.

While Fort McMurray has been the traditional target of workforce expansion planning, the sheer velocity of industrial progression has out-paced the capacity of the municipality to adapt to (and accommodate) the massive influx of employees required to construct, operate and manage the various production facilities scattered across the region. Within the last decade the traditional urban process (which favours densification and centralization) has been exchanged for one of extension and dispersion.

Future growth will continue to be accommodated via the construction of isolated company work camps, particularly as new extraction operations commence on sites far removed from pre-established permanent communities.

1 *2012 Census: Demographic Profile*, Regional Municipality of Wood Buffalo, 2012 (www.woodbuffalo.ab.ca/Municipal-Government/ Municipal-Archived-Census-Reports.htm), 17.



25. **Ruth Lake Lodge** (56.9818, -111.5369)

Rooms:	604
Type:	Open
Operator:	Clean Harbors

Notes:

Satellite image shows Ruth Lake Lodge site under construction to the west of Highway 63

Info:

www.evereadyindustrial.com/locations/index.asp?id=386



26. **Millennium Lodge** (56.9772, -111.5004)

Rooms:	2 058
Type:	Closed
Operator:	Suncor

Info:

www.suncor.com/en/working/4606.aspx

27. **Borealis Lodge** (56.9755, -111.4935)

Rooms:	1 504
Type:	Closed
Operator:	Suncor

Info:

www.suncor.com/en/working/4616.aspx

28. **Suncor Voyageur Complex** (56.9599, -111.4926)

Rooms:	4 600
Type:	Closed
Operator:	Suncor

Notes:

With the decision by Suncor not to move forward with the construction its 'Voyageur Upgrader' project in 2013, the ultimate completion of the Voyageur camp complex is uncertain. Originally, the project was designed with an intended capacity of 4 600 persons. Further information is necessary to determine whether (a) the project has been completed in all of its phases, and (b) if the workers have been or will be phased into completed portions of the camp in lieu of the Voyageur cancellation. (The original design brief for the project – containing the 4 600 capacity estimate – can be found at the link below.)

Info:

www.sahuri.com/images/PDFs/CompiledProjectList.pdf



29. **BlackSand Craft Camp** (56.9503, -111.5792)

Rooms:	760
Type:	Open
Operator:	Horizon North Camps & Catering

Info:

www.hncampsandcatering.horizonnorth.ca/index.php/main/content_page/67

30. **BlackSand Executive Lodge** (56.9462, -111.5738)

Rooms:	665
Type:	Open
Operator:	Horizon North Camps & Catering

Info:

www.hncampsandcatering.horizonnorth.ca/index.php/main/content_page/74







31. **Poplar Creek Aggregate Operations** (56.9416, -111.6381)

Rooms:	~ 30
Type:	Closed
Operator:	Athabasca Minerals

Info:

www.athabascaminerals.com/s/camp.asp



32. **Poplar Creek / Birch Mountain Lodge** (56.9235, -111.5402)

Rooms:	1 080
Type:	Open
Operator:	Horizon North Camps & Catering

Notes:

Poplar Creek and Birch Mountain Lodges are two separate 540 person camps located on the same site. Only Poplar Creek Lodge is shown in the satellite image, with Birch Mountain Lodge having been constructed at a later date. For floor plans, aerial images and a more detailed project description see second 'info' link below.

Info:

www.hncampsandcatering.horizonnorth.ca/index.php/main/content_page/72

www.modular.org/Awards/AwardEntryDetail.aspx?awardentryid=1040



33. **Bighorn Lodge** (56.9314, -111.4852)

Rooms: 500
Type: Open
Operator: Noralta Lodge (Fort McMurray Village)

34. **Black Bear Lodge** (56.9298, -111.4836)

Rooms: 550
Type: Open
Operator: Noralta Lodge (Fort McMurray Village)

35. **Buffalo Lodge** (56.9269, -111.4830)

Rooms: 600
Type: Open
Operator: Noralta Lodge (Fort McMurray Village)

36. **Lynx Lodge** (56.9280, -111.4880)

Rooms: 750
Type: Open
Operator: Noralta Lodge (Fort McMurray Village)

37. **Wolverine Lodge** (56.9261, -111.4881)

Rooms: 750
Type: Open
Operator: Noralta Lodge (Fort McMurray Village)

Notes:

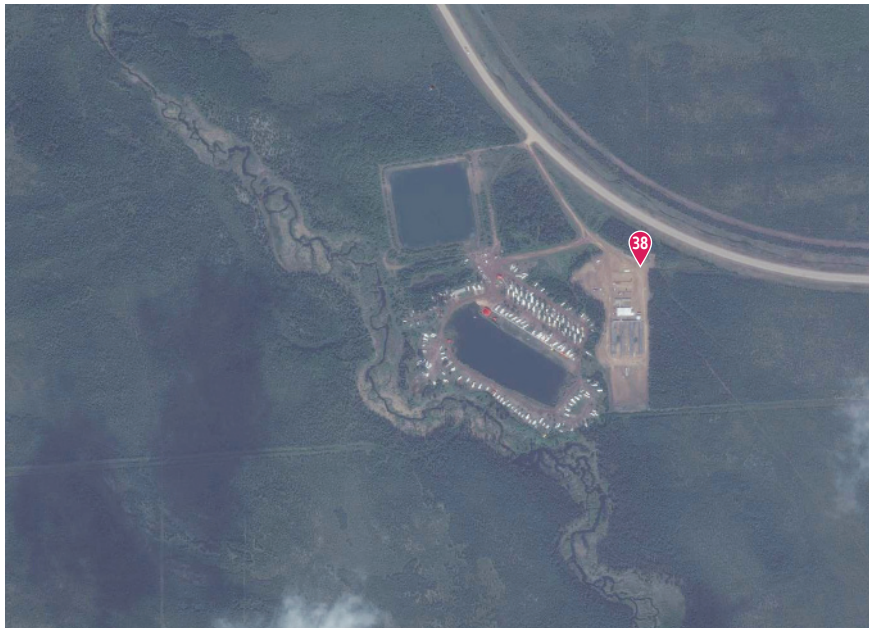
The satellite image predates the construction of Lynx and Wolverine Lodges.

Bottom right of the satellite image shows a large area cleared and populated with campers; an alternative to living in an industry camp is to 'camp' in personal trailers or RVs on one of the few campsites which are found throughout the region. (Data on ownership and maximum capacity not available.)

Info (33 – 37):

www.noraltalodge.com/locations/fort-mcmurray-village/





38. **At Home Lodging** (56.6375, -111.2419)

Rooms:	40
Type:	Open
Operator:	At Home Lodging

Notes:

'At Home Lodging' has been built on an existing campground near the Fort McMurray airport. While it remains a small camp, it is evidence of the camp becoming a trend, which replaces prior forms of itinerant working accommodations and emerges – not only on remote industrial sites – within the city itself.

Info:

www.athomelodging.ca/Home.page

FORT McMURRAY | ANALYSIS

TOTAL CAMP CAPACITY:	14,491	
OPEN:	6,299	(43 %)
CLOSED:	8,192	(57 %)
PERMANENT RESIDENTS:	72,944	

The 14 camps in the immediate vicinity of Fort McMurray (see note, bottom right) accommodate a maximum of 14.5 thousand Oil Sands employees; which accounts for nearly a quarter (22%) of the camp rooms provided across the whole of the Athabasca Region. Just over 8 thousand (57%) of these rooms are provided within *closed* company camps, while the remaining 6.3 thousand (43%) are available within *open* commercial camps.

Unlike the MacKay area study, where large camps are seen dispersed throughout an expansive territory servicing of a variety of industrial operations, the McMurray study reveals a dense cluster of large camps to the north of the urban area – all of which have been constructed in service of the Oil Sands' two inaugural projects: the Suncor (formerly *Sun Oil*) base operations mine which was opened in 1967, and Syncrude's *Mildred Lake* project which openend just over a decade later in 1978. Continued expansion of these two surface mines has resulted in significant workforce growth; contributing, inevitably, to substantial population growth in Fort McMurray and, as a result, to increased commuter traffic on the stretch of Highway 63 between the urban area and the Oil Sands projects to the north.

With the exception of Suncor's planned Voyageur camp complex (reference #28), recent additions to this cluster of camps north of Fort McMurray have been initiated entirely by third-party commercial camp providers. Noralta's Fort McMurray Village (ref. #33-37), Horizon's BlackSand and Poplar Creek Lodges (ref. #29, 30, 32) and Clean Harbour's Ruth Lake Lodge (ref. #25) have all been constructed within the last five years, and suggest an attempt to capitalize on the failures of Fort McMurray to successfully accommodate continuous workforce growth. In response to cost of living concerns and congested commuter infrastructures, the typological model of the remote camp has been re-purposed (as an accommodations alternative) on sites which are in no way remote – suggesting that the relevance of the camp is not limited to extensions of the industrial edge condition.

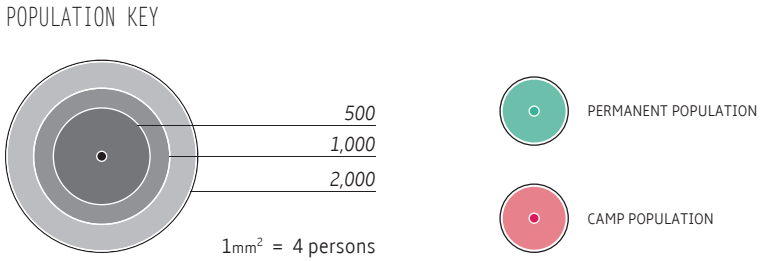
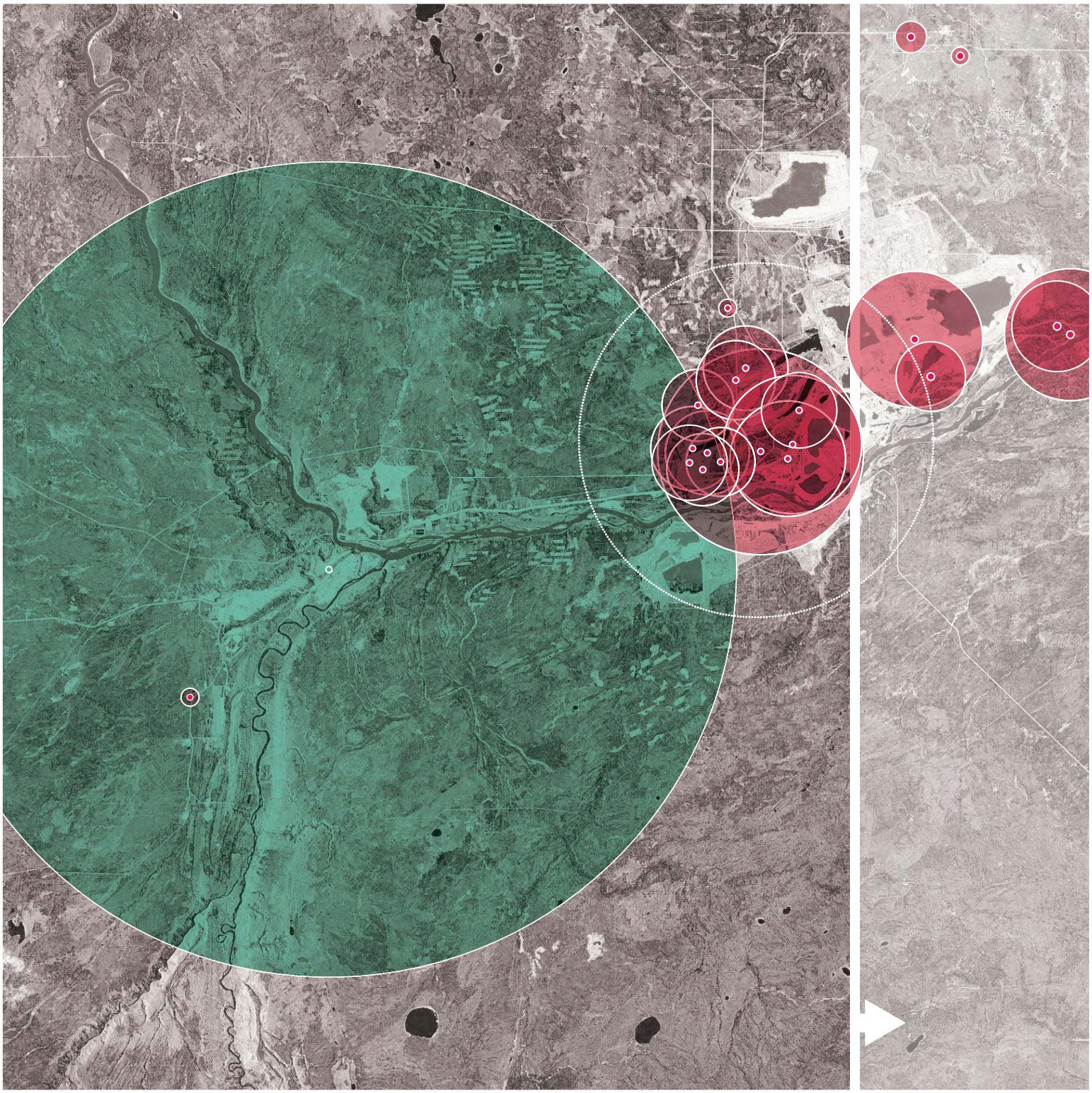


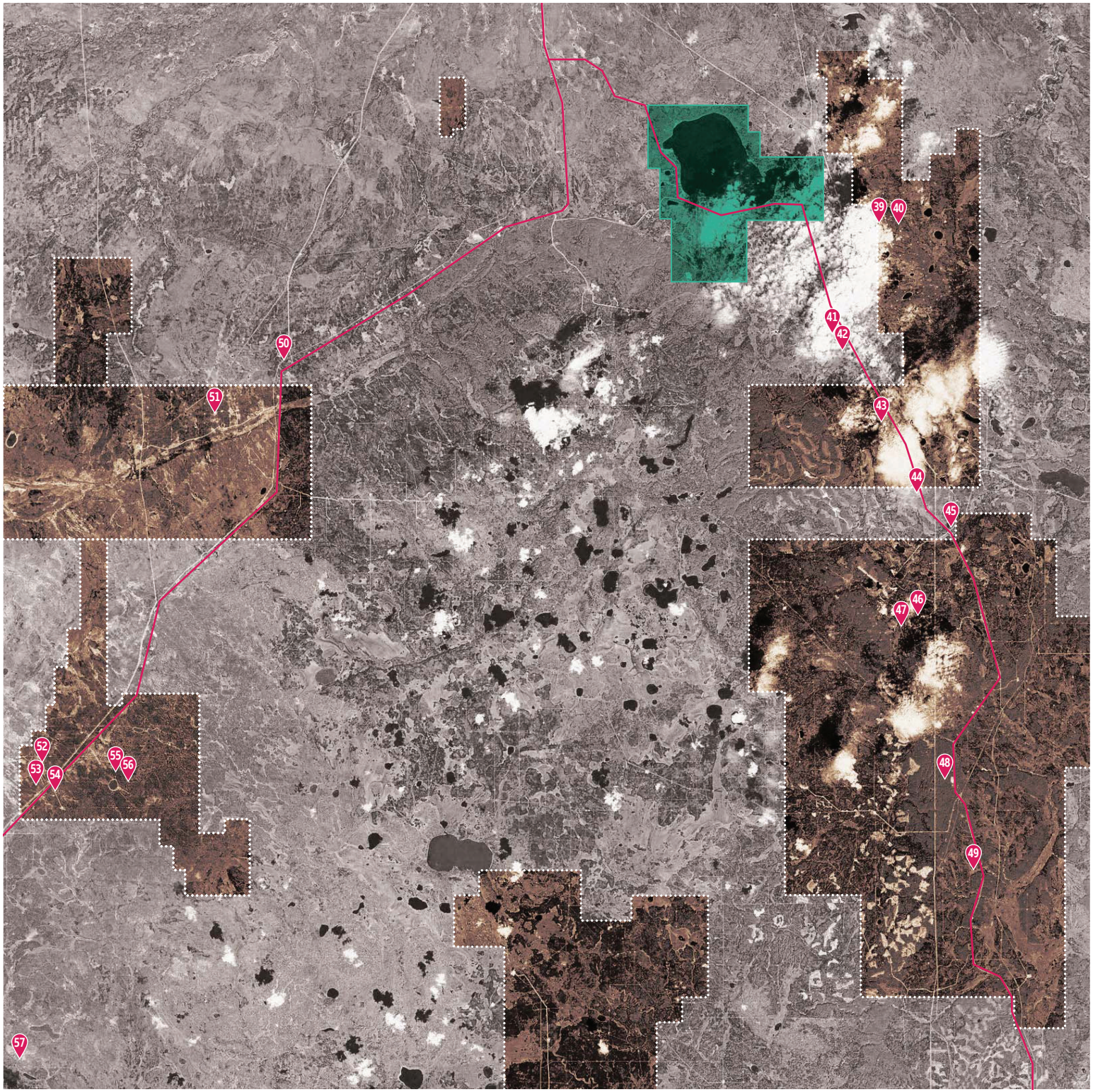
Fig. (3.06) **[right]** Fort McMurray Population Distribution: Camp capacities are illustrated in red, while permanent communities are shown in green. The area inscribed by each circle corresponds to the population capacity at each individual site (see legend above).

NOTE: Camps drawn within the tinted section (#'s 10 – 15, right) are included in the Area 1 – Fort MacKay portion of the camp catalogue, and are not (for the sake of clarity) included in the accommodations tally for Area 2 – Fort McMurray (top left).

0 km 5 km 20 km

AREA 2 | POPULATION DISTRIBUTION

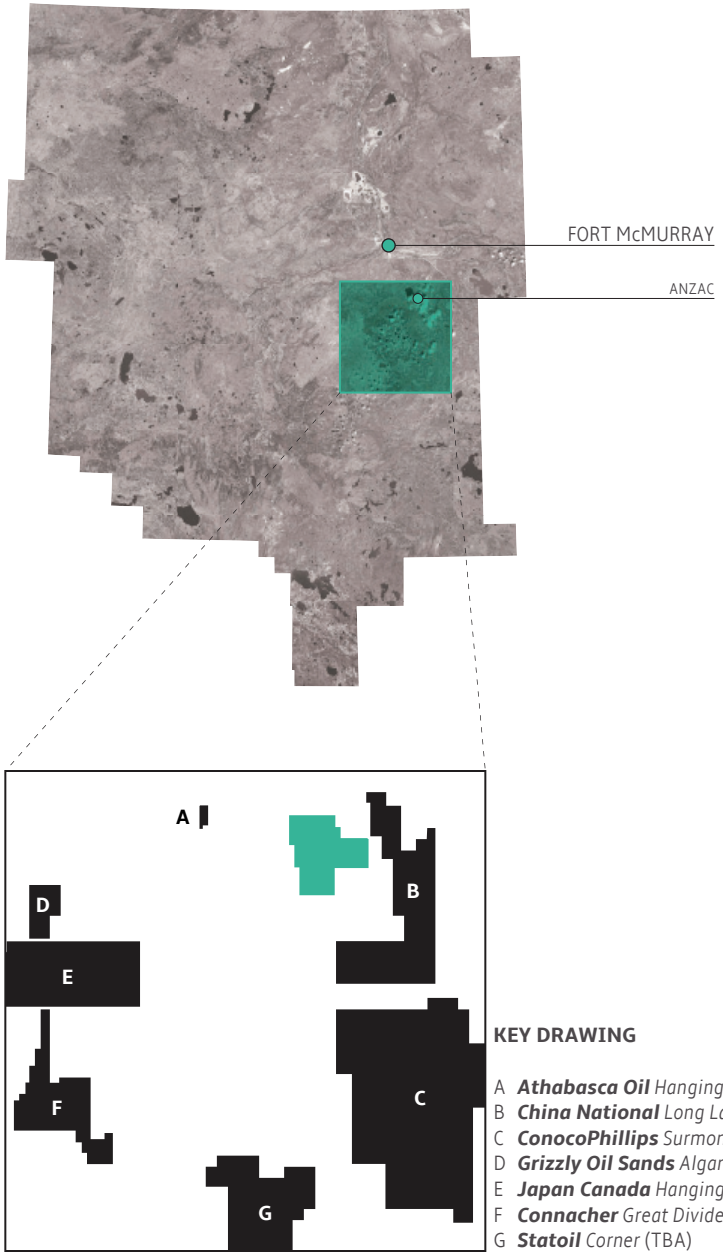




AREA 3 | ANZAC

20 km
5 km
0 km

OIL SANDS PROJECT BOUNDARY
PERMANENT COMMUNITY
WORK CAMP LOCATION
AIRPORT / AERRODROME



KEY DRAWING

A ***Athabasca Oil*** *Hangingstone* (TBA)
B ***China National*** *Long Lake* (2008)
C ***ConocoPhillips*** *Surmont* (2005)
D ***Grizzly Oil Sands*** *Algar Lake* (2014)
E ***Japan Canada*** *Hangingstone* (1999)
F ***Connacher*** *Great Divide* (2007)
G ***Statoil*** *Corner* (TBA)

ANZAC | SUMMARY

LOCATION:	(56.4468, -111.0461)
POPULATION:	714
AREA:	8.15 km^2

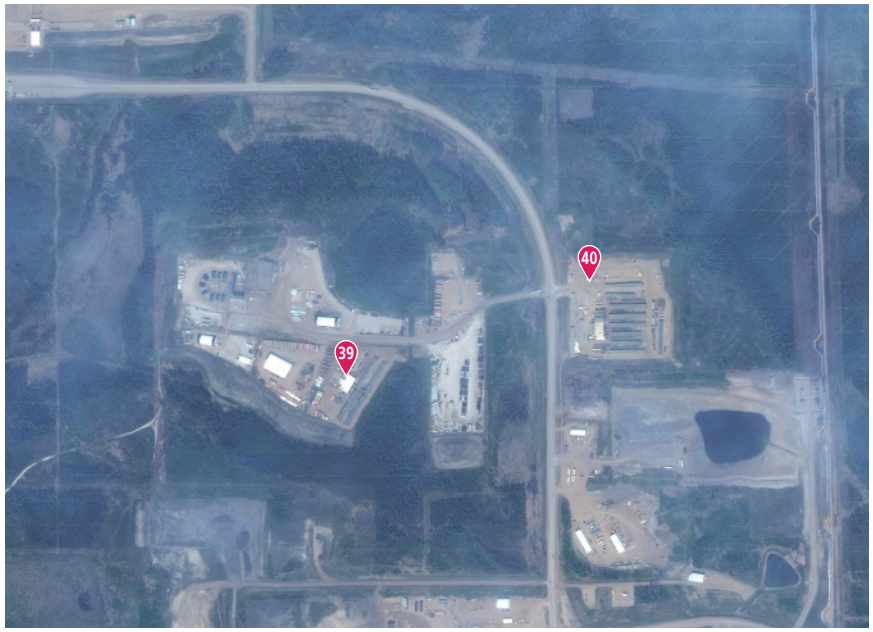
The community of Anzac is located 36 kilometres south of Fort McMurray on the eastern edge Willow Lake, and neighbours Gregoire Lake Provincial Park as well as reservation #176 of the Fort McMurray First Nation. The hamlet consists of approximately two-hundred and thirty private dwellings and accommodates a permanent population of just over seven hundred people.[1] Oil operations in the Anzac area are exclusively *in-situ* projects; a term used in reference to horizontal well-drilling technologies which liquefy (via steam or air injection) and then extract bitumen from deposits considered too deep to surface mine.

In 2013 the seven projects operating in the vicinity of Anzac (left) produced a total of just 28.8 million barrels of oilsand product; or only about 4.5% of all Oil Sands production.[2] While this figure is comparatively small, expansion plans suggest that as early as 2020 local projects will be producing 158 million barrels of oilsand product annually (or about 430 thousand barrels/day); nearly quintupling the local production capacity over the next few years.[3]

1 *2012 Census: Demographic Profile*, Regional Municipality of Wood Buffalo, 2012 (www.woodbuffalo.ab.ca/Municipal-Government/ Municipal-Archived-Census-Reports.htm), 24.

2 *Oil Sands Information Portal: Interactive Map*, Alberta Energy Regulator, accessed July 2014 (www.osip.ablerta.ca).

3 *Oilsands Review Project Status August 2014*, Oilsands Review (www.oilsandsreview.com/ProjectList.asp).



39. **Nexen Long Lake Lodge** (56.4229, -110.9607)

Rooms: ~ 60
Type: Closed
Operator: Nexen / CNOOC

Info:

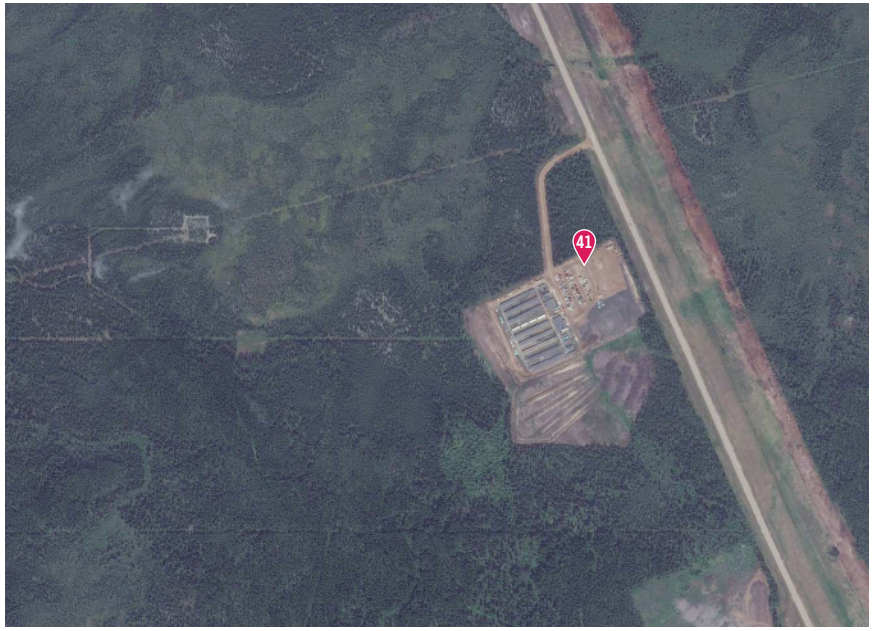
[Wood Buffalo Work Camp Report 2012]
http://www.woodbuffalo.net/JobSeekers/JobVacancyReport/index.html

40. **Nexen Long Lake East** (56.4239 -110.9524)

Rooms: 480
Type: Closed
Operator: Nexen / CNOOC

Info:

[Wood Buffalo Work Camp Report 2012]
http://www.woodbuffalo.net/JobSeekers/JobVacancyReport/index.html



41. **Gregoire River** (56.3665, -111.0172)

Rooms: 400
Type: Open
Operator: Brookwood Camps & Catering

Info:

www.brookwoodcamps.ca/gregoire-river-open-camp.php

42. **HML Open Camp** (56.3582, -111.0125)

Rooms:	~ 50
Type:	Open
Operator:	HML Camps

Info:

www.hmlcamp.com/home

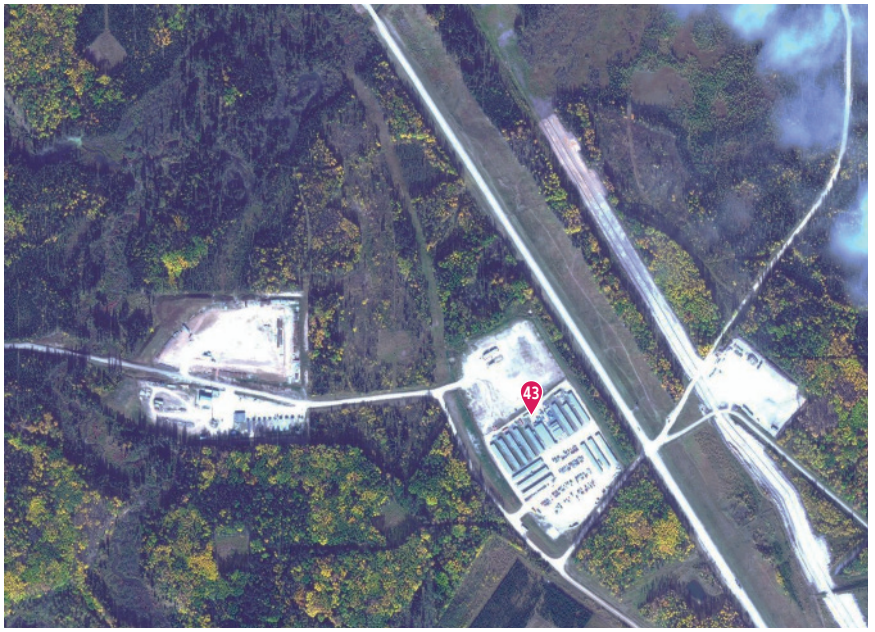


43. **Nexen Kinosis Camp** (56.3188, -110.9700)

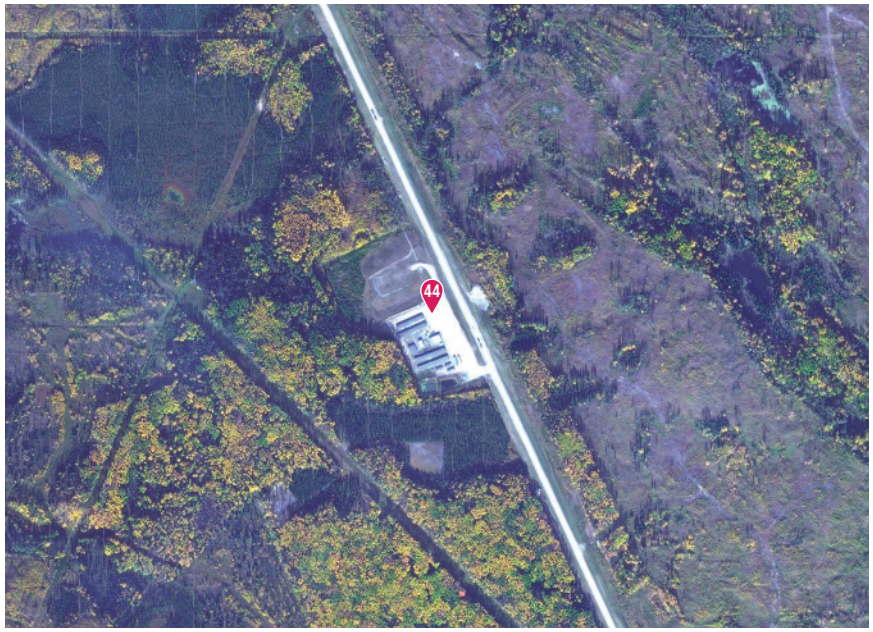
Rooms:	~ 700
Type:	Open
Operator:	Nexen / Aramark

Info:

[Wood Buffalo Work Camp Report 2012]
http://www.woodbuffalo.net/JobSeekers/JobVacancyReport/index.html





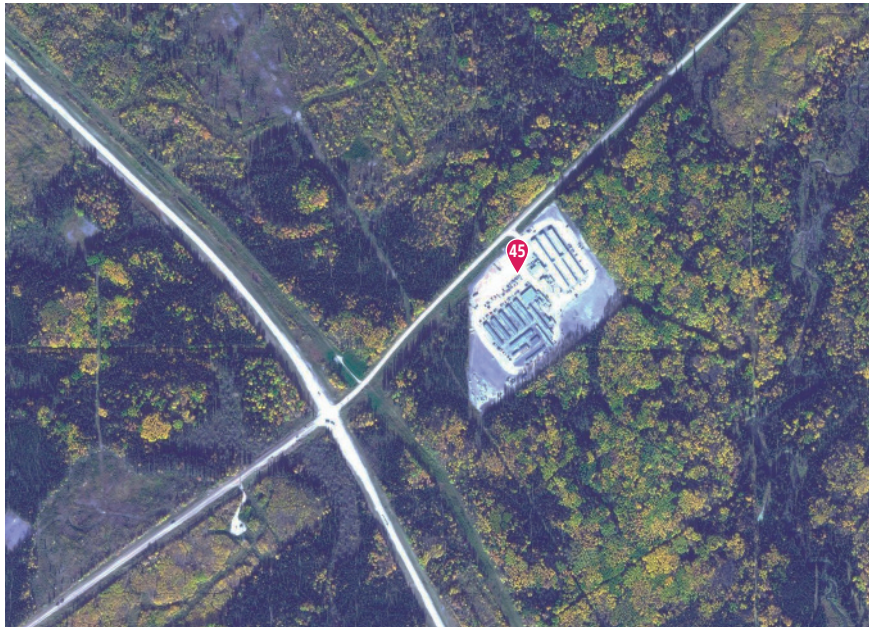


44. **Anzac Lodge** (56.2725, -110.9371)

Rooms:	526
Type:	Open
Operator:	Civeo (PTI Group)

Info:

www.civeo.com/lodges-villages/canada/anzac-lodge/#



45. **Surmont Lodge** (56.2532, -110.8996)

Rooms:	550
Type:	Open
Operator:	Surmont Lodge

Info:

www.surmontlodge.com/accommodations.html

46. **Surmont II Residence** (56.2024, -110.9276)

Rooms:	3 112
Type:	Closed
Operator:	Conoco Phillips / Northern Trailer

Notes:

Camp is shown incomplete during construction. Oval outline of indoor ice rink visible between central operations building and finished sleeper wings. Trailer modules can been seen lining the north-eastern edge of the construction site in preparation for assembly. Interior and exterior images of the completed camp can be found at the 'info' link below.

Info:

www.northerntrailer.com/conocophillips.htm

47. **Surmont I Camp** (56.1958, -110.9450)

Rooms:	~ 60
Type:	Closed
Operator:	Conoco Phillips

Notes:

In all likelihood, the Surmont I Camp will be decommissioned when Surmont II is completed and becomes the central housing facility for all of Conoco Phillips's Surmont employees.

Info:

[Wood Buffalo Work Camp Report 2012]
www.woodbuffalo.net/JobSeekers/JobVacancyReport/index.html



0 m 250 m 500 m 1000 m



48. **Cheecham Lodge** (56.1092, -110.9021)

Rooms:	278
Type:	Open
Operator:	Target Logistics

Info:

www.targetlogistics.net/cheecham-lodge.php



49. **Northgate Open Camp** (55.9874, -110.8351)

Rooms:	215
Type:	Open
Operator:	Northgate Industries Ltd.

Info:

www.northgateindustries.com/pages/open-camps.php



50. **Sand Tiger Lodge** (56.3489, -111.5812)

Rooms:	422
Type:	Open
Operator:	Sand Tiger Lodge

Info:

www.sandtigerlodging.com/location/sand-tiger/



51. **JACOS Hangingstone** (56.3173, -111.6587)

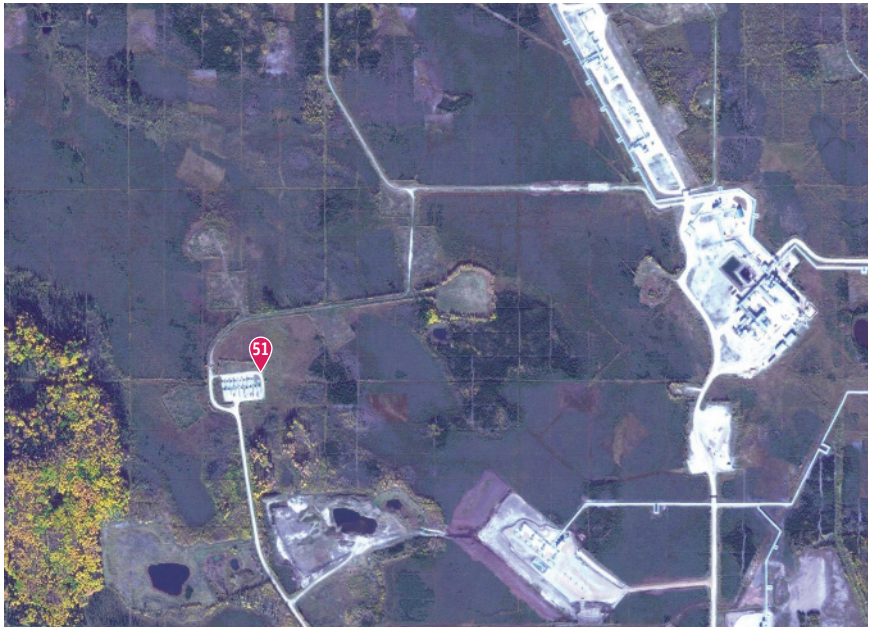
Rooms:	600
Type:	Closed
Operator:	Japan Canada Oil Sands

Notes:

As the Hangingstone project transitions from demonstration to active commercial project, JACOS anticipates the need for a camp capacity of 600 persons on the operations site (not yet represented in satellite photography). Operation is expected to commence at the end of 2014. The JACOS 'environmental impact assessment' (which contains these camp capacity estimates) can be found at the 'info' link below.

Info:

www.jacos.com/Business/Pages/Applications.aspx





52. **Connacher Lodge** (56.1153, -111.8356)

Rooms:	60
Type:	Closed
Operator:	Connacher Oil and Gas Ltd. / Clean Harbors

Info:

www.cleanharbors.com/browse_by_service/lodging_services/closed_client_lodges.html

53. **Train 2 Construction Camp** (56.1088, -111.8359)

Rooms:	400
Type:	Closed
Operator:	Connacher Oil and Gas Ltd.

Notes:

Camp not yet visible in satellite image. See Connacher's Environmental Impact Assessment (link below) for camp description and population estimate.

Info:

http://www.connacheroil.com/en/documents/eia/04_Part_B.pdf

54. **Unidentified Connacher Camp** (56.1026, -111.8235)

Rooms:	~ 60
Type:	N/A
Operator:	N/A

Info:

N/A

55. **Algar Lodge (Construction)** (56.1162, -111.7513)

Rooms:	200
Type:	Closed
Operator:	Connacher Oil and Gas Ltd. / Clean Harbors

Info:

www.cleanharbors.com/browse_by_service/lodging_services/closed_client_lodges.html

56. **Algar Lodge (Operation)** (56.1147, -111.7403)

Rooms:	60
Type:	Closed
Operator:	Connacher Oil and Gas Ltd. / Clean Harbors

Info:

www.cleanharbors.com/browse_by_service/lodging_services/closed_client_lodges.html



57. **Marianna Lake Lodge** (55.9995, -111.9645)

Rooms:	486
Type:	Open
Operator:	Civeo (PTI Group)

Info:

www.civeo.com/lodges-villages/canada/mariana-lake-lodge/



0 m 250 m 500 m 1000 m

ANZAC | ANALYSIS

TOTAL CAMP CAPACITY:	8,719	
OPEN:	3,627	(42 %)
CLOSED:	5,092	(58 %)
PERMANENT RESIDENTS:	714	

The 19 camps illustrated in the Anzac area accommodate a maximum of nearly 9 thousand migrant workers, which represents approximately 13% of the total camp rooms currently available in the Athabasca Region. Similar to the previous two study areas, Anzac's camp accommodations are split approximately 60:40 between *closed* and *open* camp facilities, favouring the private company camp model over third-party commercial camps. All accommodations in the study area are positioned along the north/south Highways 63 (west) and 881 (east), which are the primary transport routes servicing the southeastern portion of Athabasca.

Uniquely, the Anzac area is dominated by the presence of a single camp: ConocoPhillips' *Surmont Phase 2 Residence* (ref. #46), a state of the art, 3 thousand room, facility which was completed in 2013 (and is currently the second largest work camp in the Oil Sands, behind Civeo's *Wapasu Creek Lodge*). ConocoPhillips' new camp anticipates the workforce necessary to expand its local operations from 28 to 130 thousand barrels per day (which, according to the operators construction schedule, should begin operating at capacity by 2015).[1] A further 135 thousand barrel per day facility is planned for 2023, expanding the total production capacity of the *Surmont* lease to 265 thousand barrels per day within the decade.[2]

Construction of the *Surmont 2* camp suggests substantial expansion of the local accommodations footprint as younger projects transition from pilot facilities to full-scale commercial operations. *JapanCanada*, *Statoil* and *Athabasca Oil* have all planned significant expansions of their current operations facilities by the end of the decade, which suggests a substantial increase in the local reliance on migrant work in the near future.

POPULATION KEY

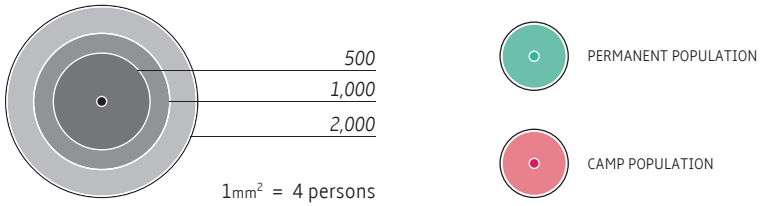


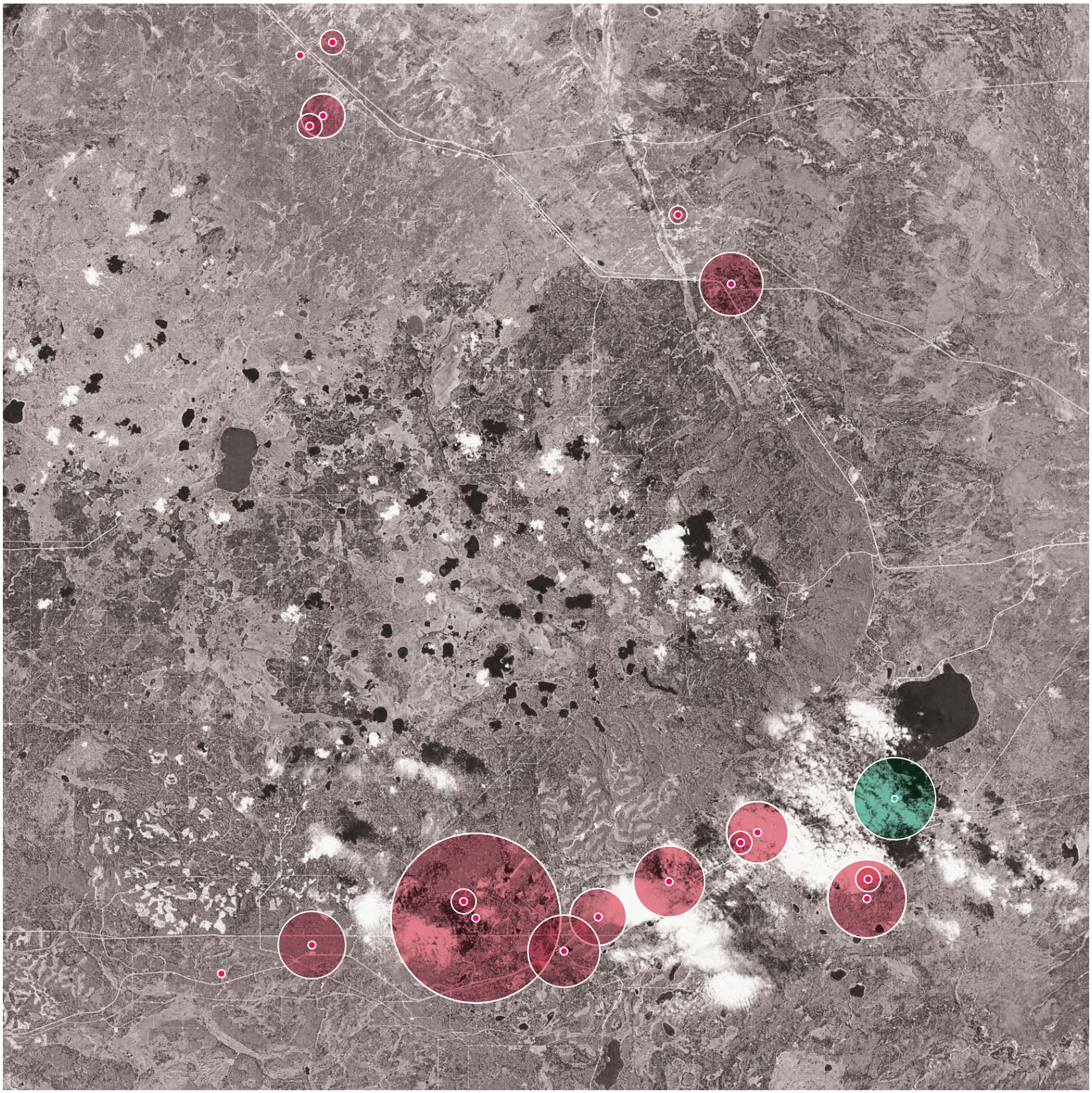
Fig. (3.08) **[right]** Anzac Population Distribution: Camp capacities are illustrated in red, while permanent communities are shown in green. The area inscribed by each circle corresponds to the population capacity at each individual site (see legend above).

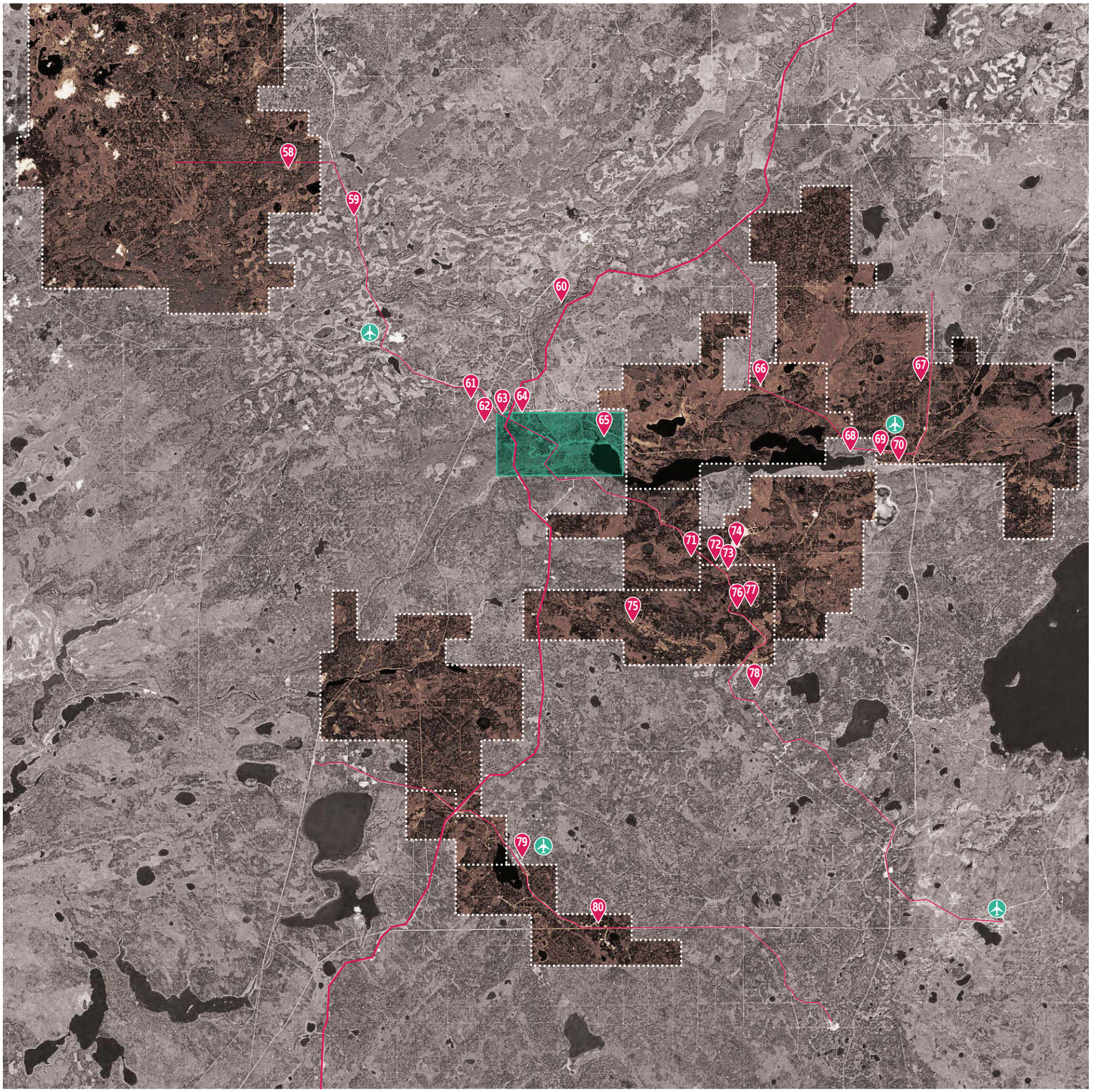
1 *Oilsands Review Project Status August 2014*, Oilsands Review (http://www.oilsandsreview.com/ProjectList.asp).

2 Ibid.

0 km 5 km 20 km

AREA 3 | POPULATION DISTRIBUTION





AREA 4 | CONKLIN

20 km
5 km
0 km

OIL SANDS PROJECT BOUNDARY
PERMANENT COMMUNITY
WORK CAMP LOCATION
AIRPORT / AERODROME



KEY DRAWING

A ***Statoil*** *Leismer* (2010)
B ***MEG Energy*** *Christina Lake* (2008)
C ***Cenovus*** *Narrows Lake* (TBA)
D ***Harvest Ops.*** *Black Gold* (TBA)
E ***Cenovus*** *Christina Lake* (2002)
F ***Devon Canada*** *Jackfish* (2007)
G ***CNRL*** *Kirby North* (TBA)
H ***CNRL*** *Kirby Lake* (TBA)
I ***CNRL*** *Kirby South* (2013)

CONKLIN | SUMMARY

LOCATION:	(55.6465, -111.1324)
POPULATION:	318
AREA:	13.75 km^2

The hamlet of Conklin, Alberta is located 155 kilometres south of Fort McMurray along Highway 881 (between the communities of Janvier and Lac La Biche), and is home to more than 3 hundred permanent residents.[1] Although no First Nations communities are captured within the immediate study area, 70% of Conklin residents identify as First Nations Canadian (according to the most recent municipal census).[2]

The area surrounding the community is the site of sizable operations by *Statoil*, *Cenovus*, *Devon* and *MEG Energy*, whose in-situ projects produced nearly 75 million barrels of oilsand product in 2013 (an average of approximately 200 thousand barrels per day), or about 8.5% of total Oil Sands production.[3] While this figure is small relative to the scale of open pit operations north of Fort McMurray, local production is expected to nearly quadruple by 2020; with Conklin area projects expanding to accommodate nearly 750 thousand barrels per day of processing power by the end of the decade.[4]

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1 *2012 Census: Demographic Profile*, Regional Municipality of Wood Buffalo, 2012 (www.woodbuffalo.ab.ca/Municipal-Government/ Municipal-Archived-Census-Reports.htm), 24.

2 Ibid, 57.

3 *Oil Sands Information Portal: Interactive Map*, Alberta Energy Regulator, accessed July 2014 (www.osip.ablerta.ca).

4 *Oilsands Review Project Status August 2014*, Oilsands Review (www.oilsandsreview.com/ProjectList.asp).



58. **Leismer Lodge** (55.7964, -111.3608)

Rooms:	480
Type:	Closed
Operator:	Statoil

Notes:

Leismer Lodge was designed by Edmonton architects Manasc Isaac in 2008 with an initial capacity of 480 and has the potential to expand to 600 rooms should project expansion require. The camp is LEED certified (more information at the link below).

Info:

www,manascisaac.com/our_work/projects/leismer



59. **Waddell Camp** (55.7614, -111.2892)

Rooms:	650
Type:	Closed
Operator:	Statoil

Notes:

While neither Statoil nor any camp services provider maintains publicly accessible information on the Waddell Camp, the Environmental Servives Association of Alberta conducted a groundwater well assessment of the camp in 2013 which strongly suggests that the camp is still in operation (see link below for assessment and camp capacity estimates).

Info:

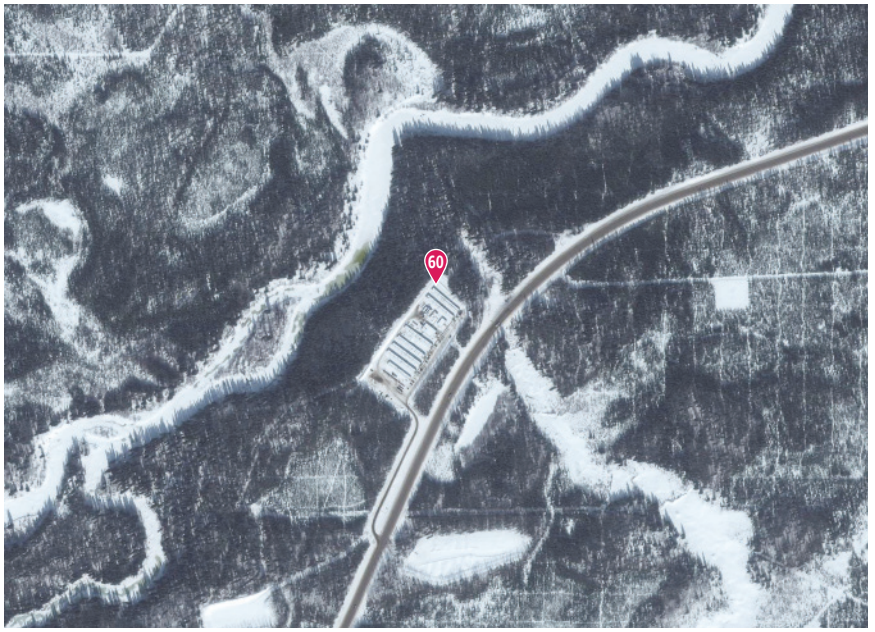
www.esaa-events.com/proceedings/watertech/2013/pdf/P18.pdf

60. **CH Leismer Lodge** (55.7115, -111.0746)

Rooms:	312
Type:	Open
Operator:	Clean Harbors

Info:

http://www.cleanharbors.com/browse_by_service/lodging_services/open_lodges.asp



61. **Conklin Lodge** (55.6597, -111.1632)

Rooms:	946
Type:	Open
Operator:	Civeo (PTI Group)

Info:

www.civeo.com/lodges-villages/canada/conklin-lodge/







62. **Tamarack Lodge** (55.6476, -111.1534)

Rooms:	377
Type:	Open
Operator:	Clean Harbors

Info:

www.cleanharbors.com/locations/index.asp?id=381

63. **NEC Contractors Camp** (55.6473, -111.1401)

Rooms:	136
Type:	Closed
Operator:	NEC Group / CRC Camps & Catering

Info:

www.newswire.ca/en/story/1151301/northern-frontier-corp-announces-proposed-public-offering-of-subscription-receipts-and-the-proposed-acquisition-of-the-nec-group-an-industrial-energy-



64. **Karen's Katering** (55.6463, -111.1285)

Rooms:	140
Type:	Open
Operator:	Karen's Katering

Info:

www.karenskatering.ca/main/

65. **Christina Lake Lodge** (55.6329, -111.0324)

Rooms:	~ 70
Type:	Open
Operator:	Civeo (PTI Group)

Info:

www.civeo.com/lodges-villages/canada/christina-lake-lodge/

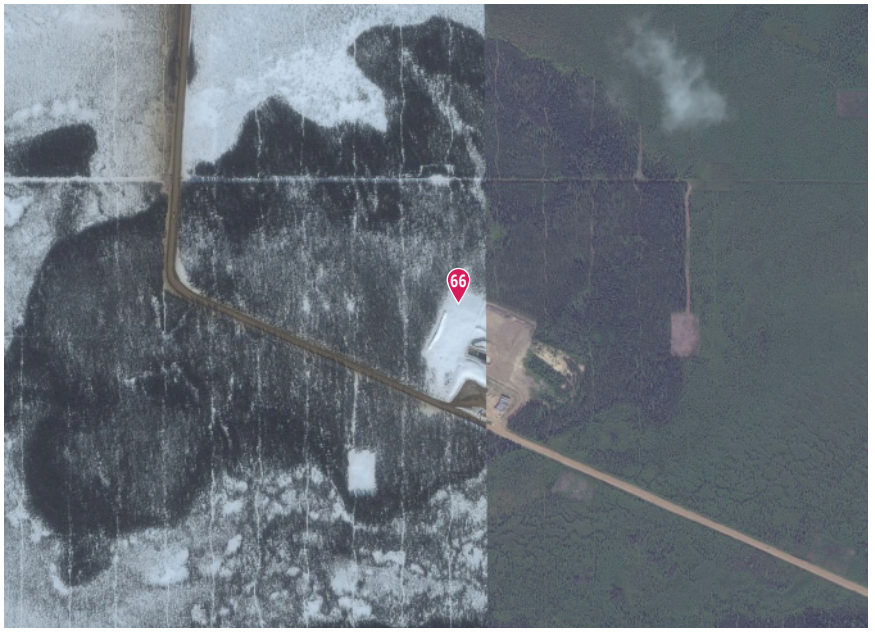


66. **Unidentified Camp Site** (55.6648, -110.8760)

Rooms:	N/A
Type:	N/A
Operator:	N/A

Info:

N/A







67. **MEG 2 Construction Camp** (55.6667, -110.7099)

Rooms:	300
Type:	Closed
Operator:	MEG

Info:

www.megenergy.com/operations/christina-lake/explore-site



6. **MEG Pirate's Cove Lodge** (55.6285, -110.7785)

Rooms:	150
Type:	Closed
Operator:	MEG / ATCO Structures & Logistics

Notes:

Satellite image predates camp construction. Complex was completed in 2012. See 'info' link below.

Info:

www.atcosl.com/en-ca/Projects/MEG-Energy-Lodge

69. **MEG Sawbones Chalet** (55.6263, -110.7470)

Rooms:	300
Type:	Closed
Operator:	MEG

Info:

[Wood Buffalo Work Camp Report 2012]
www.woodbuffalo.net/JobSeekers/JobVacancyReport/index.html

70. **MEG Poplar Ridge Lodge** (55.6259, -110.7411)

Rooms:	1 500
Type:	Closed
Operator:	MEG

Notes:

MEG Energy's Christina Lake airstrip can be seen North of the camp site. Employee's are flown to MEG's worksites directly from cities across the country. See 'info' link below for more information.

Info:

www.modular.org/Awards/AwardEntryDetail.aspx?awardentryid=995

www.megenergy.com/jobs/why-meg-works-you/where-we-work

71. **Sunday Creek Lodge** (55.5665, -110.9358)

Rooms:	1 160
Type:	Open
Operator:	Black Diamond Ltd.

Info:

www.blackdiamondlimited.com/main/page/camp-2

www.albertaoilmagazine.com/2012/09/black-diamond-group-ltd-bolsters-its-business-providing-beds-for-oil-sands-workers/





0 m 250 m 500 m 1000 m



72. **Elk's Point Lodge** (55.5620, -110.9176)

Rooms:	~ 400
Type:	Closed
Operator:	Cenovus Energy

Info:

[Wood Buffalo Work Camp Report 2012]
http://www.woodbuffalo.net/JobSeekers/JobVacancyReport/index.html

73. **Birch Creek Lodge** (55.5633, -110.9052)

Rooms:	~ 250
Type:	Closed
Operator:	Cenovus Energy

Info:

[Wood Buffalo Work Camp Report 2012]
http://www.woodbuffalo.net/JobSeekers/JobVacancyReport/index.html



74. **Martin's Point Lodge** (55.5735, -110.8978)

Rooms:	~ 400
Type:	Closed
Operator:	Cenovus Energy

Info:

[Wood Buffalo Work Camp Report 2012]
http://www.woodbuffalo.net/JobSeekers/JobVacancyReport/index.html



75. **Devon Jackfish 3 Operators Camp** (55.5268, -110.0023)

Rooms:	~ 90
Type:	Closed
Operator:	Devon

Notes:

Presumably – given that the satellite image indicates a plan identical to Devon's Jackfish 2 Operators camp (shown below) – the Jackfish 3 camp accommodates the same number of persons and is operated by Black Diamond Group Ltd. Nonetheless, no concrete information is available.

Info:

N/A



76. **Devon Jackfish 2 Operators Camp** (55.5292, -110.8790)

Rooms:	90
Type:	Closed
Operator:	Devon / Black Diamond Group Ltd.

Info:

www.blackdiamondlimited.com/main/page/article-17

77. **Devon Jackfish 2 Construction Camp** (55.5292, -110.8790)

Rooms:	~ 450
Type:	Closed
Operator:	Devon

Info:

N/A





78. **Devon Pike Camp** (55.6259, -110.7411)

Rooms:	~ 550
Type:	Closed
Operator:	Devon

Info:

N/A



79. **Unidentified Camp** (55.3886, -111.1185)

Rooms:	N/A
Type:	N/A
Operator:	N/A

Info:

N/A

80. **Kirby Lake Camp** (55.3569, -111.0394)

Rooms:	792
Type:	Closed
Operator:	CNRL / ATCO Structures & Logistics

Info:

www.atcosl.com/en-ca/Projects/Documents/CNRL – Kirby Lake – 2011.pdf





CONKLIN | ANALYSIS

TOTAL CAMP CAPACITY:	9,543	
OPEN:	3,005	(31 %)
CLOSED:	6,538	(69 %)
PERMANENT RESIDENTS:	318	

The 24 industry camps surrounding the community of Conklin provide lodging for a maximum of 9.5 thousand migrant employees (or 14% of the Athabasca Region's cumulative camp capacity). Only about 30% of these camp rooms are available within commercial third-party camps, while the remaining 70% are provided within closed company facilities.

Like the massive camp facilities located to the north and east of Fort MacKay, the camps in the Conklin area are positioned well beyond a daily commuting distance from Fort McMurray, however – unlike the industrial footprint to the far north – Conklin area projects are more-or-less clustered around the hamlet and individual company/commercial camps rarely exceed 1 thousand rooms. For these reasons the Conklin area represents what was perhaps the most viable opportunity for some form of integrated industry/community development (or experimentation with the normative camp model) which might have included permanent dwellings – and infrastructural improvement – alongside the 'temporary' company camps.

Predictibly this has not been the case. The centre of Conklin has become the site for a sizeable grouping of open camps which function ostensibly as remote hotels, promoting '*employment tourism*' in lieu of meaningful community integration. The camp, as an architectural type, has been superimposed (by third party camp operators) within established communities like Conklin, while closed company camps cluster at the periphery of permanent town development and establish autonomous *workforce-only* residences from which employees migrate without any interaction with the adjcent community.

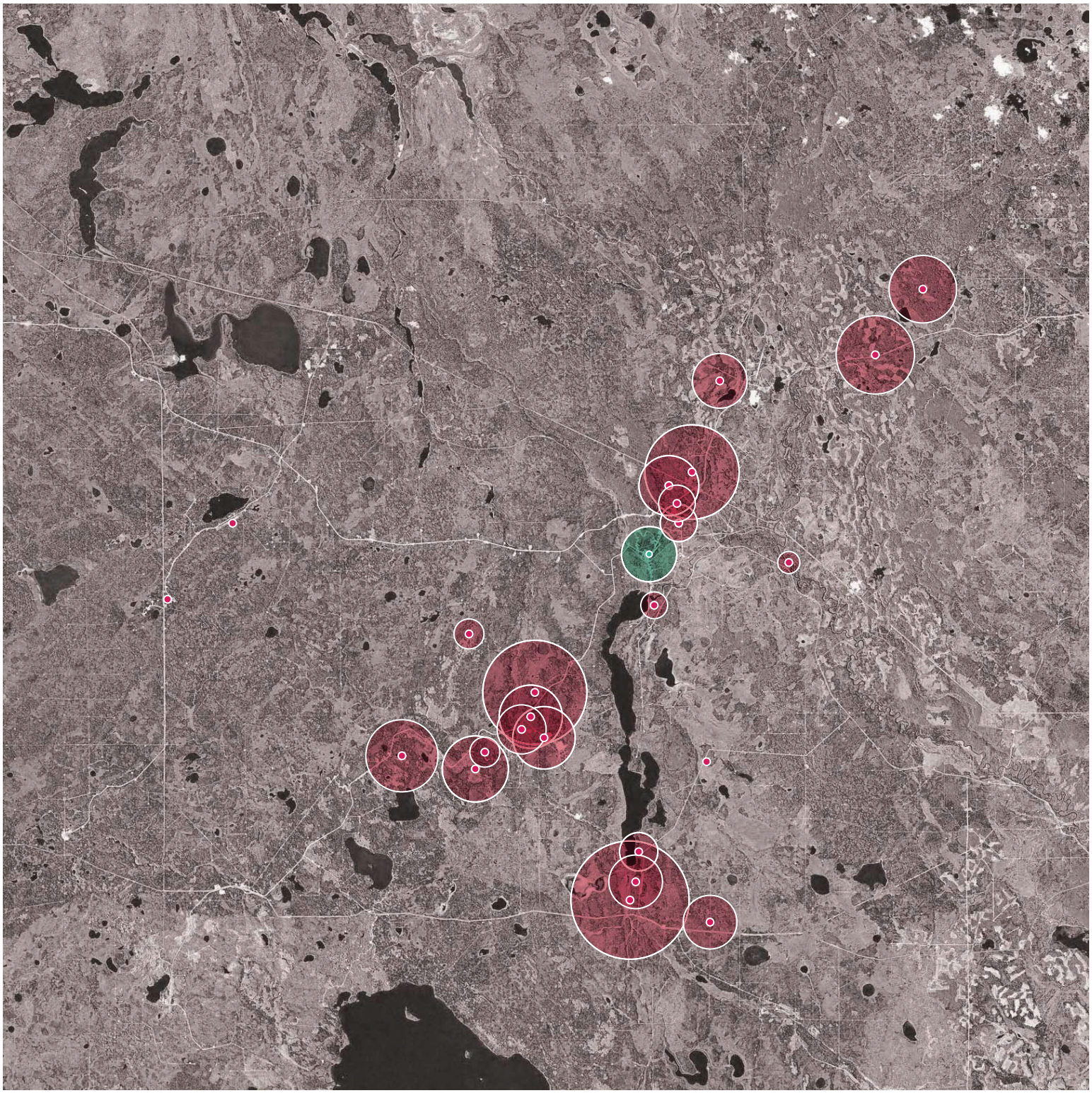
Today the potential population of camp workers far exceeds the local permanent population, and suggests that the opportunity for integration has passed. As projects in the area mature and camps expand to accommodate greater numbers of migrant employees, the community (in a fashion similar to Fort MacKay) will likely experience marginal (if any) growth.

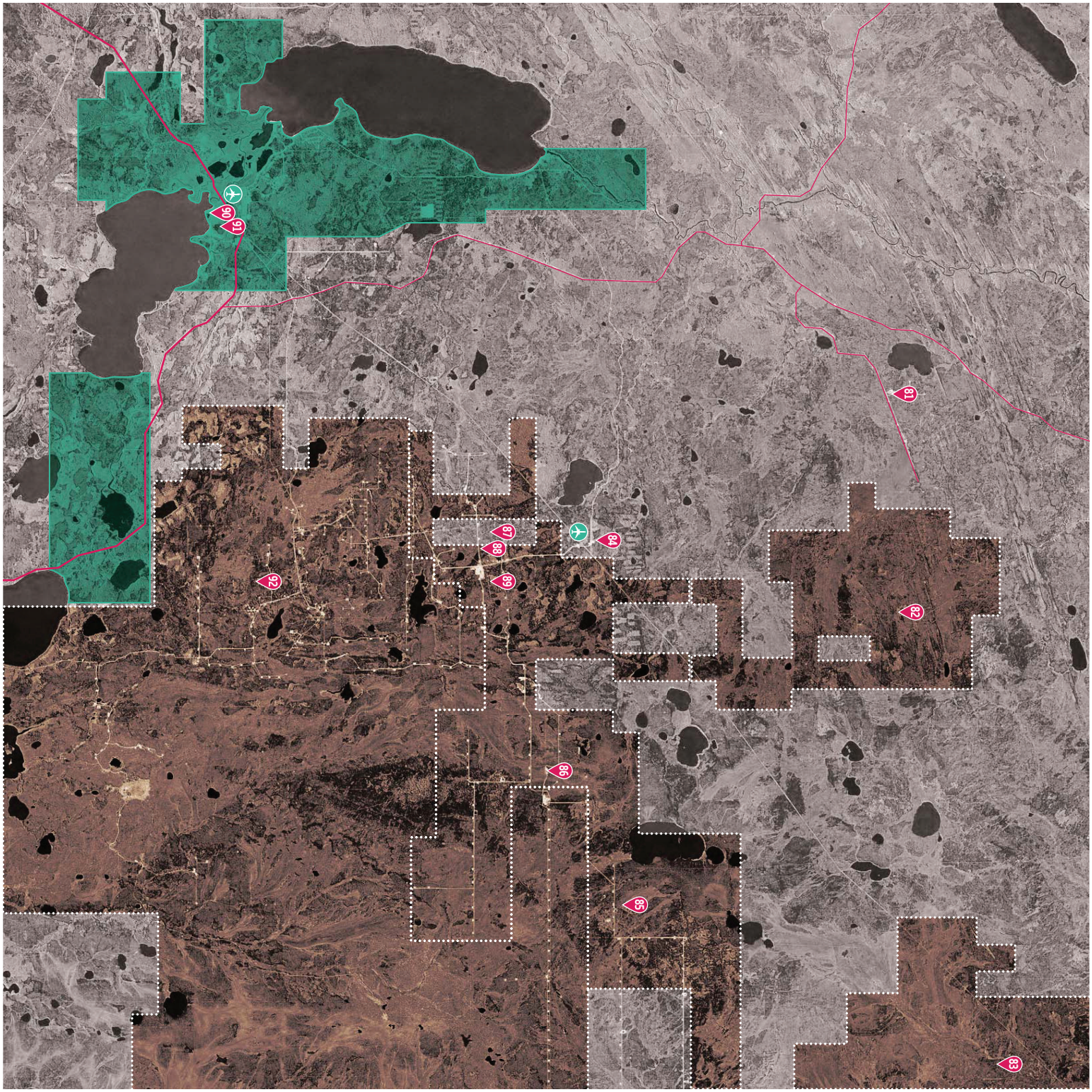


Fig. (3.09) **[right]** Conklin Population Distribution: Camp capacities are illustrated in red, while permanent communities are shown in green. The area inscribed by each circle corresponds to the population capacity at each individual site (see legend above).

0 km 5 km 20 km

AREA 4 | POPULATION DISTRIBUTION





AIRPORT / AERODROME

WORK CAMP LOCATION

PERMANENT COMMUNITY

OIL SANDS PROJECT BOUNDARY

0 km 5 km 20 km

AREA 5 | WABASCA-DESMARAIS



WABASCA-DESMARAIS | SUMMARY

LOCATION:	(55.9667, -113.8500)
POPULATION:	1,440
AREA:	28.6 km^2

Wabasca-Desmarais is a community of approximately 1.5 thousand[1] situated between North and South Wabasca Lakes, approximately 175 kilometres south and west of Fort McMurray. There is significant First Nations presence in the area, with nearly 2,400 Bigstone Cree living on-reserve in the immediate vicintiy of hamlet.[2]

Oil Sands development in the area is very recent. Both Laricina and Cenovus completed construction on their first local projects in 2011, while CNRL's Brintnell pilot – which initiated local production in 2003 – remains experimental and is not (as of now) considered a commercial production facility. These projects represent a combined production capacity of only about 45 thousand barrels of oil sand product per day – a number which, according to present expansion plans, could reach 150 thousand per day as early as 2017.[3]

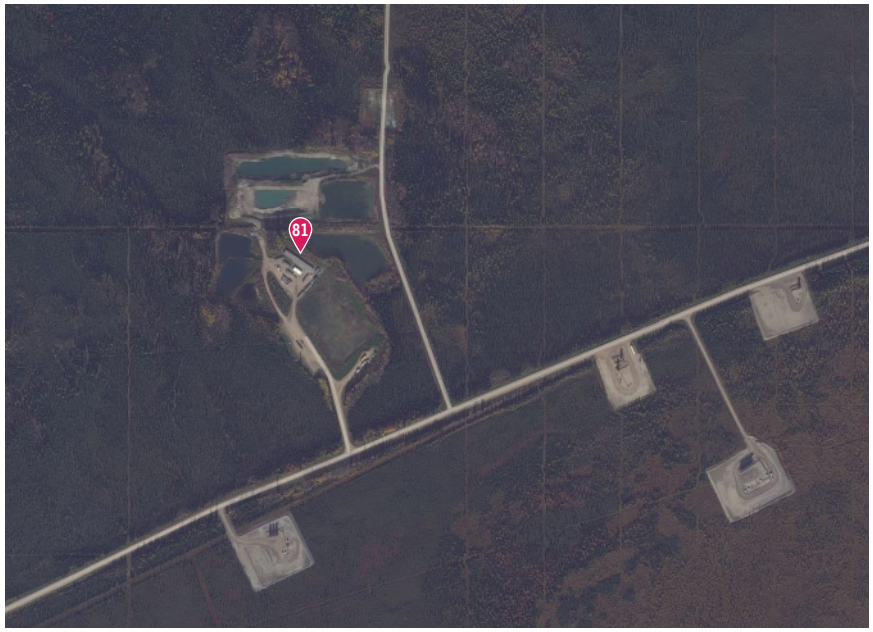
Unlike the prior study areas, Wabasca is not located within the Municipality of Wood Buffalo, and therefore work camps established here have yet to be included within any regional census documentation.

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1 *Population and Dwelling Counts 2011 and 2006 censuses*, Statistics Canada, 2011 (www12.statcan.gc.ca/census-recensement/2011/dp-pd/hlt-fst/pd-pl/index-eng.cfm).

2 *Location*, Bigstone Cree First Nation, 2013 (www.bigstone.ca/content/location-1), accessed July 2014.

3 *Oilsands Review Project Status August 2014*, Oilsands Review (www.oilsandsreview.com/ProjectList.asp).



81. **Unidentified Camp** (56.3328, -113.6215)

Rooms: ~ 10
Type: N/A
Operator: N/A

Info:

N/A



82. **Laracina Germain Project Camp** (56.3361, -113.4010)

Rooms: ~ 400
Type: Closed
Operator: Laricina Energy Ltd.

Info:

www.environmentuat.alberta.ca/documents/Laricina-Energy-Germain-Proj-SummaryTable.pdf

83. **Laracina Saleski Operations Camp** (56.3911, -112.9001)

Rooms:	~ 100
Type:	Closed
Operator:	Laricina Energy Ltd.

Info:

www.laricinaenergy.com/uploads/saleski/Saleski_project.pdf

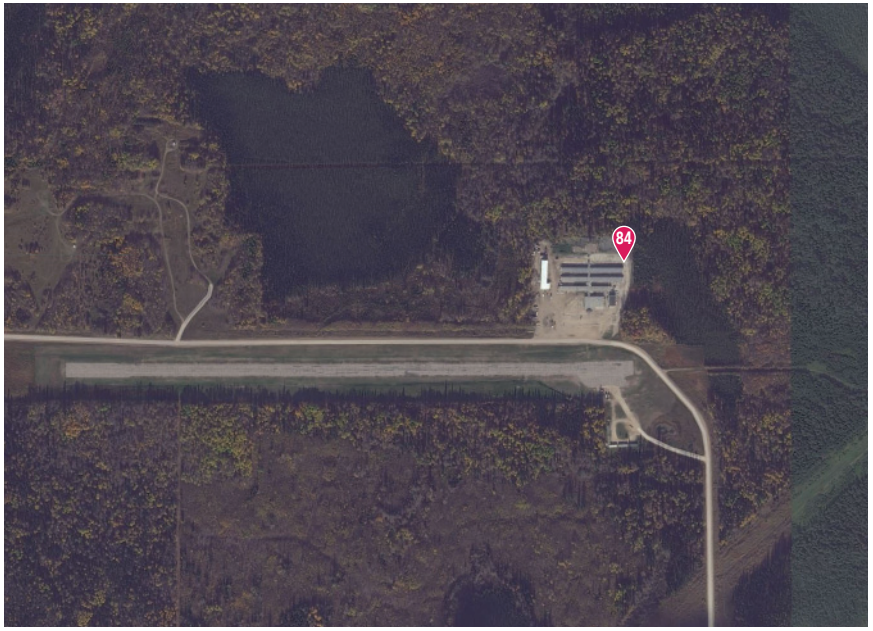


84. **Pelican Lake Camp** (56.1621, -113.4654)

Rooms:	182
Type:	Open
Operator:	Horizon North Camps & Catering

Info:

www.hncampsandcatering.horizonnorth.ca/index.php/main/content_page/73







85. **Unidentified Camp** (56.1776, -113.0581)

Rooms: ~ 50
Type: N/A
Operator: N/A

Info:

N/A



86. **Grand Rapids Operations Camp** (56.1355, -113.1965)

Rooms: ~ 30
Type: Closed
Operator: Cenovus Energy Ltd.

Info:

N/A

87. **Pelican Lake Construction Camp** (56.0996, -113.4350)

Rooms:	~ 400
Type:	Closed
Operator:	Cenovus Energy Ltd.

Info:

N/A

88. **Pelican Lake Operations Camp** (56.0984, -113.4305)

Rooms:	~ 200
Type:	Closed
Operator:	Cenovus Energy Ltd.

Info:

N/A



0 m *250 m* *500 m* *1000 m*



89. **Unidentified Camp** (56.1002, -113.4000)

Rooms: ~30
Type: N/A
Operator: N/A

Info:

N/A



90. **CNRL Brintnell Camp** (55.9591, -113.8125)

Rooms: ~400
Type: Closed
Operator: CNRL

Info:

N/A

91. **Wabasca Lodge** (55.9591, -113.8125)

Rooms:	250
Type:	Open
Operator:	Noralta Lodge

Info:

www.noraltalodge.com/locations/wabasca-lodge/

92. **Unidentified Camp** (55.9591, -113.8125)

Rooms:	~100
Type:	N/A
Operator:	N/A

Info:

N/A



0 m *250 m* *500 m* *1000 m*

WABASCA-DESMARAIS | ANALYSIS

TOTAL CAMP CAPACITY:	~ 2,152	
OPEN:	~ 532	(25 %)
CLOSED:	~ 1,620	(75 %)
PERMANENT RESIDENTS:	~ 3,840	

According to the present mapping, 12 work camps are currently operational in the Wabasca-Desmarais area; together accommodating an estimated 2 thousand migrant employees (only 3% of the total camp accommodations across the Athabasca region). The information available suggests that as many as 75% of these rooms are supplied within *closed* company camps, while the remaining 25% are provided within *open* camps.

Although commercial oil operations have only begun to emerge in the Wabasca area within the last three years, the local camp footprint is already well established. Small operations camps will grow rapidly as construction on future project phases begins, while new camps (associated with project leases which have yet to obtain developmental approval) will undoubtedly emerge. As workforce demand increases locally, the opportunity to operate commercial camps in the area will dramatically improve, and the current 3:1 ratio between closed and open camp rooms will presumably begin to equalize (finally stabilizing at ~3:2 if prior study areas are any indication).

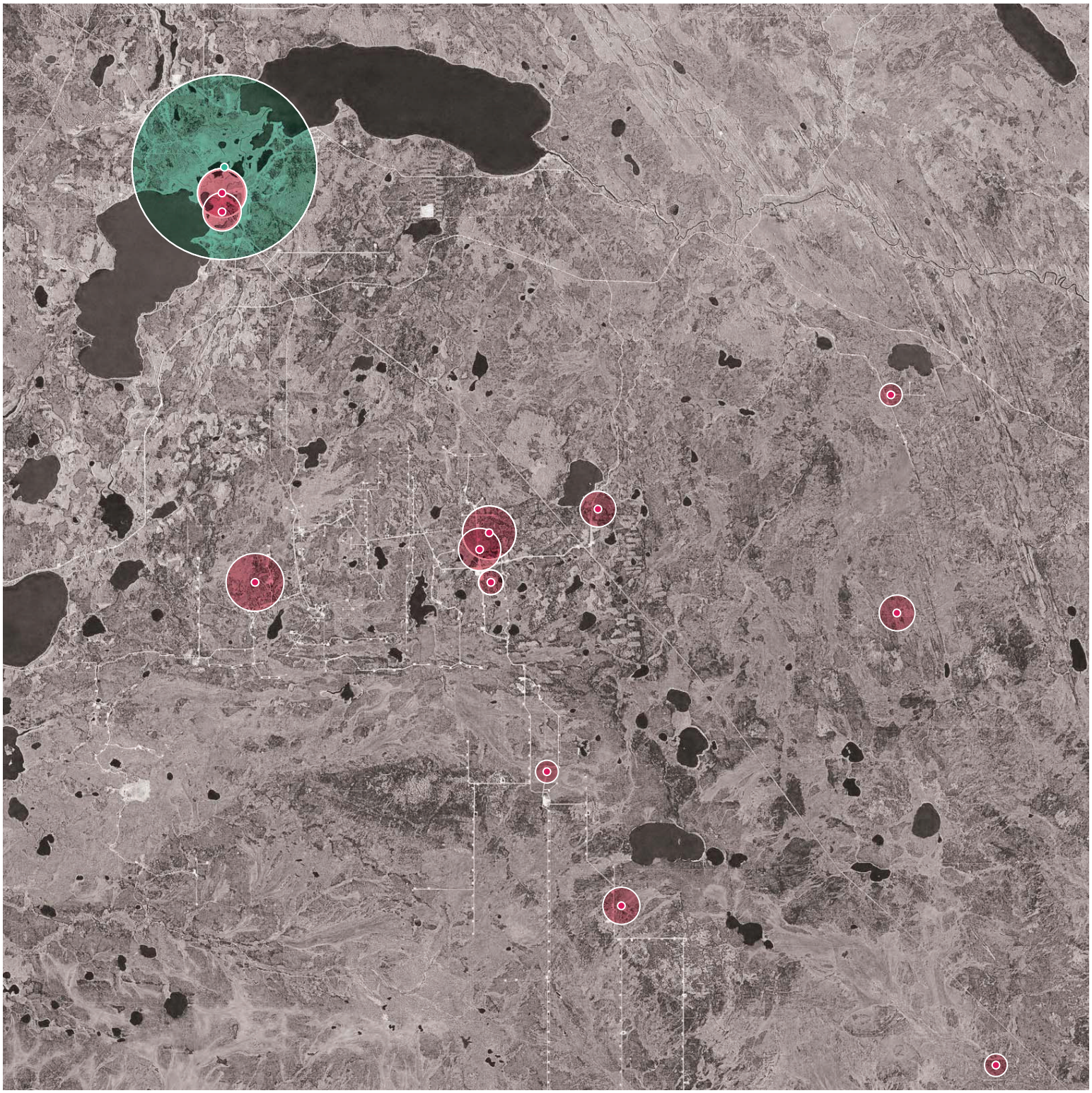
Before local operations mature, and make the construction of commercial work camps an economic possibility, municipal authorities have the opportunity to contemplate alternative development strategies which encourage greater integration with the existing community. As a fully functioning town – with elementary and secondary schools, a satellite campus of Northern Lakes College, emergency and healthcare services as well as a variety of local businesses – Wabasca-Desmarais is well suited to attract a permanent population of oil sector workers instead of resorting to the scale of camp deployment which has become standard practice in more developed areas of the industrial territory.



Fig. (3.11) **[right]** Wabasca Population Distribution: Camp capacities are illustrated in red, while permanent communities are shown in green. The area inscribed by each circle corresponds to the population capacity at each individual site (see legend above).

0 km 5 km 20 km

AREA 5 | POPULATION DISTRIBUTION



CAMP CATALOGUE | ANALYSIS

TOTAL CAMP CAPACITY:	~ 67,894
OPEN:	~ 29,408 (43 %)
CLOSED:	~ 38,486 (57 %)
PERMANENT RESIDENTS:	
RMWB:	80,225
WABASCA:	3,840

In total, the 92 camps servicing the Athabasca region accommodate a maximum population of approximately 68 thousand migrant workers, while the average camp provides room and board for roughly 740 employees. An overwhelming majority of camp beds (47,480 or 70%) are provided north of Fort McMurray, while the remainder (20,414 or 30%) are distributed throughout the areas surrounding the hamlets of Anzac, Conklin, and Wabasca-Desmarais. Finally, camps are divided approximately 60:40 between closed and open camp types (see above).

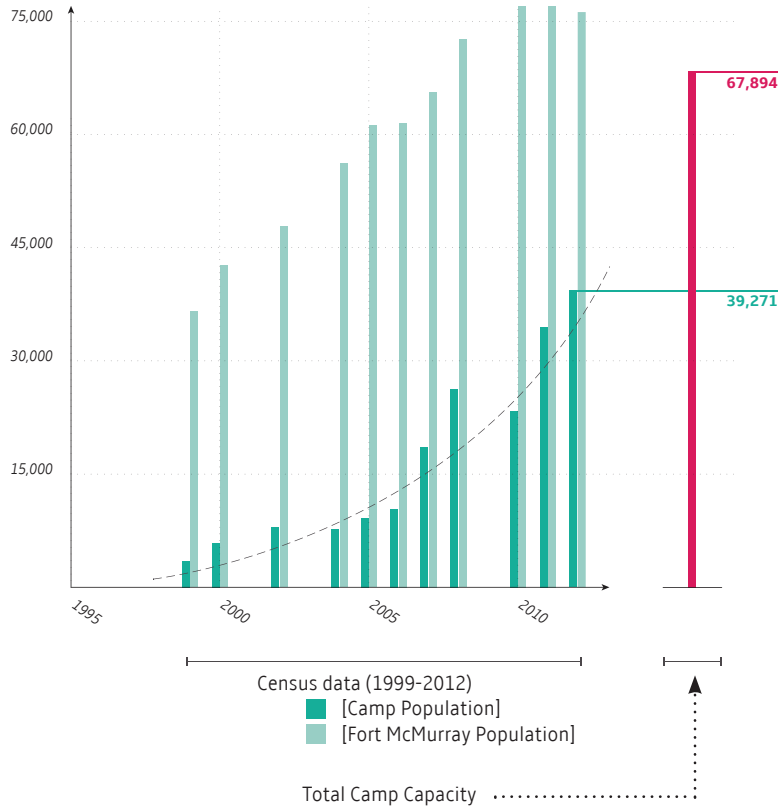
In general, the geographic distribution of the migrant population corresponds with the developmental trajectory of the greater Oil Sands project. The older, more productive open-pit mining projects north of Fort McMurray (which are positioned atop the most accessible – and therefore profitable – ore bodies) accommodate the majority of migrant workers in the region. In contrast, areas of the deposit requiring more advanced extraction technologies (harbouring geologically deeper – and therefore capital intensive – ore bodies) have been slower to begin and expand as in-situ liquefaction technologies have emerged and developed.

The catalogue and mapping exercise clearly demonstrate the characteristic population dispersion associated with the deployment of work camps. Individual camp complexes position relatively small groups of workers directly on the site of production facilities, or otherwise locate working populations between industrial projects with direct access to transport routes and/or private company aerodromes. Large camps tend to cluster around particularly lucrative project sites, but never congeal; the construction of massive camps (like Civeo's five thousand bed *Wapasu Creek Lodge*, or ConocoPhillips' three thousand bed *Surmont II Residence*) suggest a propensity to continuously push the scalar limitations of the camp typology, rather than explore more permanent inhabitation alternatives.

The catalogue also clarifies the relationship – in the Athabasca region – between work camps and adjacent communities. With the exception of Fort McMurray, not a single pre-existing permanent community has experienced significant population growth since the inauguration of nearby oil operations. The study areas examining the hamlets of Fort MacKay, Anzac and Conklin (and to a lesser degree Wabasca-Desmarais, which is only now becoming the target for prospective Oil Sands developers), show a clear separation of camps from neighbouring residential areas. In many instances, single camps are deployed just beyond the boundary inscribing a nearby hamlet; ensuring crucial access to transportation infrastructures (and in some cases electrical, potable water and sewage connections) but maintaining the autonomous domestic quality of the work camp. Where community integration has been possible, it has been avoided.

Finally, the completed catalogue reveals a fairly startling discrepancy between the quantity of camp workers counted during the 2012 Municipal

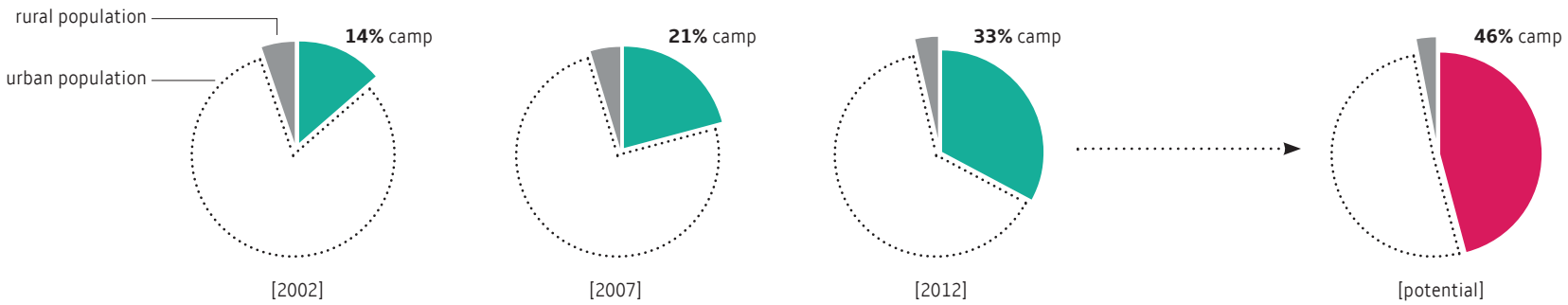
fig. 3.12 *Population growth from 1999 - 2012*



Census (fig. 3.00, left) and the total number of available camp rooms as recored herein. There are two reasons that this might be the case.

First, work in the Oil Sands is largely seasonal since the majority of construction activity takes place throughout the winter months (after the ground has solidified). This means that over the course of the year, the population of camp workers can (and does) change dramatically, with work beginning to taper off as warmer weather approaches. Because the data for the 2012 Municipal Census was collected between April 30 and July 30, the study has interrogated the phenomenon of migrant employment during the season when available work is predictably reduced and the population of migrant workers ***present in the region*** has receded. At the same time, it must be remembered that camp work is – by definition – cyclical and that, at any given moment a certain proportion of workers will be 'off-rotation' (or away from the camp) and are therefore easily overlooked during a census count.

Second, there is a tendency (particularly within closed company camps) to construct more beds than are absolutely necessary for facilities operation. These extra rooms exist specifically to accommodate the maintenance and repair personnel who might be required in a breakdown



or crisis situation. Simply put, the provision of extra rooms is essential to the functional flexibility of the work camp (which must effectively respond to fluctuations – both increases and decreases – in the quantity of on-site workers). Of course, the maximum possible population is based upon a real need for on-site labour, and thus demands to be taken seriously.

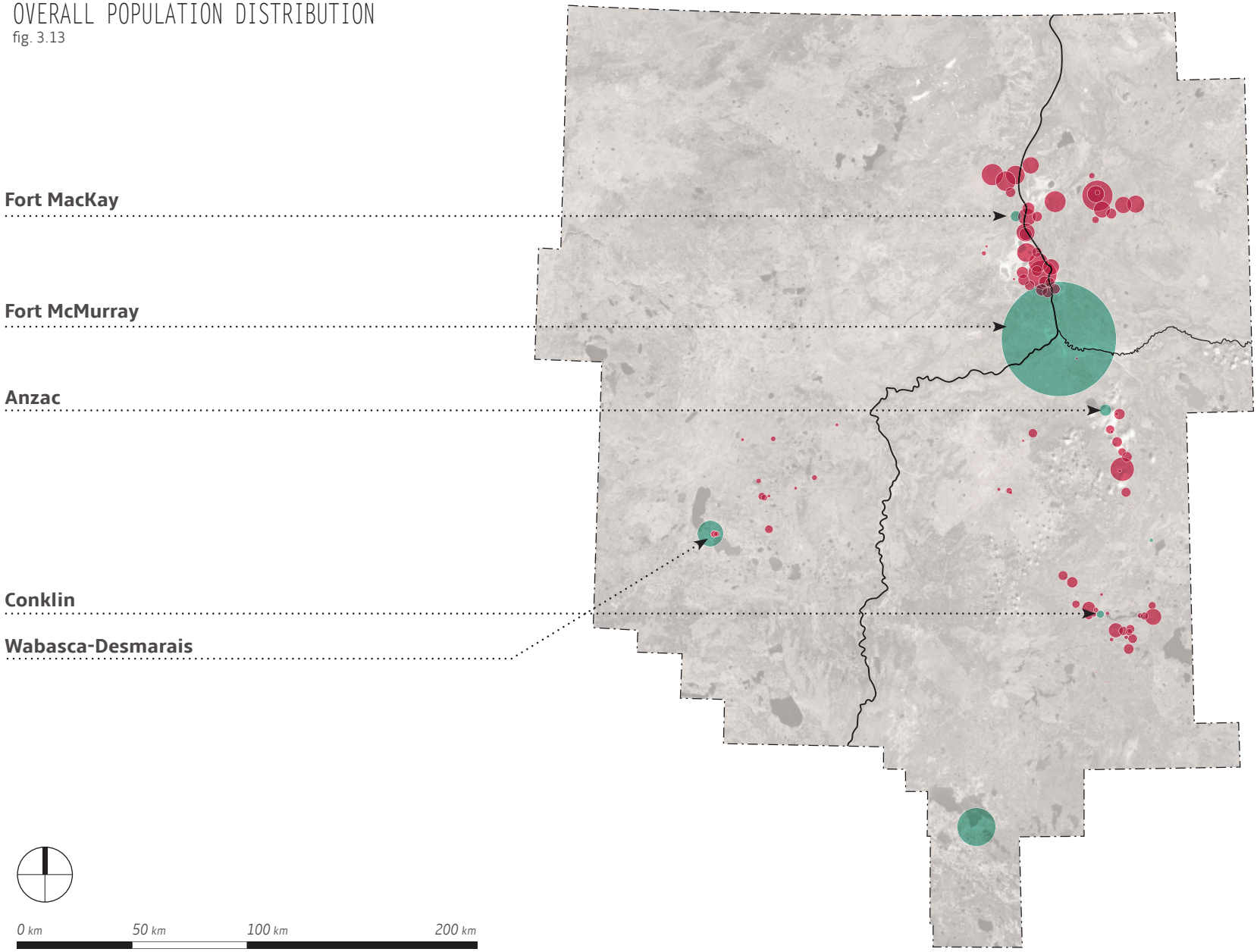
Ultimately, neither the maximum camp capacity nor the census count can perfectly articulate the actual quantity of migrant workers present (at a given moment) within the Oil Sands, since the population is always in flux. Nonetheless, both are valuable metrics for describing the tendencies of migrant work. With regards to the census, so long as data is collected during the same period each year, the demographic information indicates (with some accuracy) relative year-to-year population growth and thus describes a 'rate of change' associated with the emergence of migrant work. On the other hand, mapping the camp serves to liberate this information from purely statistical representations (like those contained within census documentation), and begins to reveal the spatial patterning which follows from the adoption of flexible work.

From a strictly spatial perspective, it is clear that the developmental footprint of work camps deviates from the typical 'town' model. Small clusters of inhabitable sites – which accommodate between 1 and 5,000 individuals – are sprawled across the industrial territory in a way which reads entirely distinct from the concentrated population growing within Fort McMurray. The camps are dispersed, while the town/city is concentrated. The camps are thus isolated, while the town/city and its residents are aggregated. The camps are homogenous (a singular architectural object, repeated over and over), while the town/city struggles to diversify.

These qualities are not accidental. Through the dispersion of the 'urban' project, the exclusion of the family unit, the isolation of the individual worker, and the atomization of the working population, Oil Sands employers advance an economic agenda. The camp – as an alternate to the company town – positions a flexible working individual, who ***(a)*** rotates into and out of the project site on a regular basis, ***(b)*** is hired based on seasonal or contracted working arrangements, and ***(c)*** has no permanent stake in either the industry or the region in which that industry operates. The camp establishes a relative increase in the *numerical flexibility* (to borrow Harvey's term) of today's working class.

OVERALL POPULATION DISTRIBUTION

fig. 3.13







04 | ACCUMULATION VIA NOMADIZATION

We now turn to a group of people whose origin is rural, but whose occupation is for the most part industrial. They are the light infantry of capital, thrown from one point to another according to its present needs. When they are not on the march they 'camp.'

– Karl Marx, *Capital; Volume 1*

PREAMBLE

Using Harvey as a theoretical foundation, this work has attempted to demonstrate how the camp fundamentally differs from more traditional forms of company owned accommodations (namely the 'company town' archetype), and concludes that the transitional period from company town to work camp has, as its primary driver, the notion of flexibility. Capitalism's 'flexibility apparatus' has, at its centre, the architectural design project of the modern work camp; which introduces a new domestic contract into the pre-existing urban framework and thereby establishes the basis for precarious forms of work. One question remains: precisely how does the camp contribute to the economic 'bottom line' of industrial operations?

Since it is not possible to deal with the economics of workforce organization using hard data (for the simple reason that none yet exists), the problem of economics must be dealt with from the abstract; where a case can be built using widely accepted economic theory, and then tested against the specific case.

We turn then (perhaps obviously) to Karl Marx's seminal text – '*Das Capital*.' *Capital* provides an astonishingly detailed deconstruction of the capitalist mode of production and traverses economic concepts methodically; from the most broad and fundamental – *the nature of the commodity and the principals of free exchange* – to the most specific and complex – *machinery and large scale industry, so-called primitive accumulation and ultimately, the subtleties of ground rent and landed property*. Marx's arguments *against* the operative tendencies of the

capitalist mode of production are meticulously built into a specific criticism, which culminates in a dissertation on parliamentary enclosure.

For the purpose of this exercise it will be useful to adopt precisely the opposite methodology; to locate those areas in '*Capital*' which deal specifically with the problematic of company owned housing (and are therefore married to an economic investigation of today's work camps), and work backwards – through the text – to better understand how the camp might be implicated in some of Marx's more broad economic concepts as an operative apparatus situated at the centre of contemporary labour/capital power relations.

THE NOMADIC POPULATION

Without a doubt the most literal connections between Marx and the modern work camp are found within *Chapter 25: The General Law of Capitalist Accumulation* under the subheading *Illustrations of the General Law of Capitalist Accumulation*. Marx's third illustration of the 'general law' is titled *The Nomadic Population* and begins;

> *We now turn to a group of people whose origin is rural, but whose occupation is for the most part industrial. They are the light infantry of capital, thrown from one point to another according to its present needs. When they are not on the march they 'camp'.*[1]

1 Karl Marx, *Capital Volume 1: A Critique of Political Economy*, trans Ben Fowkes (London: Penguin Books, 1990) 818.

Marx begins by identifying the principal characteristic of this portion of the working class; due to the finite nature of construction and resource extraction projects they constantly find themselves unemployed and are forced to travel – to new extraction sites and towards new industrial projects – in order to find work. For Marx this 'march' takes place between finite durations of contracted employment as individual employees and their families are sequentially uprooted and re-settle on some new company project. The concept of 'camp' (which, unfortunately for our purposes, Marx chooses not to revisit) assumes a specific meaning; the working individuals and their families do not own the land or the shelter that is rented to them for the duration of their stay, but are perceived (by the industrialist, the corporation, or, more generally, by capital) as alienable;

> *. . . that a landlord, "doing as he wills with his own", should be able to treat the cultivators of the soil as aliens, whom he may expel from his territory, is a question which I do not pretend to discuss . . . For that power of eviction . . . does not exist only in theory.*[2]

This is the first exploitation unique to circumstances in which workers' housing or shelter is provided by the employer; the employer assumes an additional role, that of the landlord, whose influence over the individual employee is made greater through the landlord-tenant relation. It is this additional relationship (one that is literally built, as in, it is manifest within

2 Karl Marx, *Capital Volume 1,* 838.

an architectural project) which grants the employer a new organizational technique: that of *eviction*. The potential for the employer to evict his employees without notice is what prompts Marx to use the term 'camp' in his opening statement; these places are defined by a certain precariousness with respect to workers livelihoods.

Marx avoids using the word 'camp' as a noun (to describe an architectural object), optioning instead to use the word as a verb; describing the perpetual movement of individuals and the character of their domestic circumstance. The employee is neither owner nor long-standing resident, but a *nomad* who travels between job sites when employment contracts come to their prefigured end. This is similar to, but ultimately distinct from, the kind of migratory cycle associated with the modern camp. Today, the migratory cycle has become normalized. Workers travel regularly between the work camp and a permanent home instead of traveling from job site to job site. Today's camp is characterized by an increased frequency of upheaval; workers are still situated within a precarious working arrangement, while the migratory routine has become ingrained in their working lives (not to mention codified into the architectural project of the work camp).

In '*The Nomadic Population,*' Marx identifies two further avenues for exploitation that are unique to 'company owned' accommodations: ***(a)*** the reductive nature of the accommodations provided by the company, and ***(b)*** their complete operational autonomy from municipal authority;

> *In undertakings which involve a large outlay of capital, such as railways etc., the contractor himself generally provides his army with wooden huts and so on, thus improvising villages which lack all sanitary arrangements, are outside the control of the local*

authorities, and are very profitable to the gentleman who is doing the contracting…[3]

Citing, as evidence, mid-century *Reports of Public Health,* Marx asserts that these company accommodations – lacking proper ventilation, drainage and on account of being overcrowded – contributed definitively to the spread of infectious disease.[4] According to Marx, the industrial enterprise (operating beyond the scope of local authorities) has no prerogative other than the *"abstinence…from all expenditure that is not absolutely unavoidable."*[5] By virtue of their autonomy, employers operating towns and remote camps avoided responsibility for the health of their workforce and maintained a status quo which was both *'dangerous'* and *'degrading'* according to Marx.[6]

It is curious that – after opening the section with terms which generate a sense of movement (*nomad, march, camp*) – Marx abandons the concept of the itinerant or migrant worker altogether in favour of a qualitative assessment of company constructed housing. Perhaps the qualitative crisis identified by Marx (ventilation, drainage, crowding and the spread of infectious disease) overshadowed the more fundamental relation between the working nomad and the architectural apparatus which institutionalizes a new nomadism within the working contract. In any case, it is not the abject conditions of working accommodations which are the object of interest in a present study of the modern camp (which has by and large been improved over the last several decades),

3 Karl Marx, *Capital Volume 1*, 818.

4 Ibid, 819.

5 Ibid, 820.

6 Ibid, 821.

but this fundamental relation which has been preserved and exacerbated between the nomadic working individual and the operational impetus of capitalism.

Where then is the value of the 'alienable,' 'temporary,' or 'transient' worker with respect to the production process as a whole?

THE GENERAL LAW OF CAPITALIST ACCUMULATION

In order to get a sense of how camp is strategically employed in a broader economic context, it is necessary to move outwards – from the specific sub-section *The Nomadic Population* – to the primary concept described in Chapter 25*;* that is *'The General Law of Capitalist Accumulation.'* According to Marx, *The General Law* describes the strategic production of a population of unemployed workers who are a necessary consequence of perpetually increasing production;

> *. . . it is capitalist accumulation itself that constantly produces, and produces indeed in direct relation with its own energy and extent, a relatively redundant working population, i.e. a population which is superfluous to capital's average requirements for its own valorization, and is therefore a surplus population.*[7]

While Marx wastes no time elaborating on the specific connection between

7 Ibid, 782.

camp and *The General Law*, the connection is intended to be implicit: ownership of accommodations grants a certain degree of control over interactions between the employer and the so-called *'surplus population.'* In exercising the authority to simultaneously terminate employment and evict, the 'industrialist' (the employer-landlord) releases the employee-tenant to the surplus labour market; sending the working individual and the family unit on 'the march' (to use Marx's phrase). At the same time, the company frees a space within the town or camp to employ additional workers under a revised contract. It follows that the competition relation between the employed and the unemployed portions of the working class plays out uniquely within the space of the company town or camp, where the whole population of workers is so easily exchanged for another.

According to Marx the effect of this competition is twofold. On the one hand, the increasing quantity of the unemployed produces a burden of overwork on the employed population, requiring that those who are employed work harder lest their own jobs be jeopardized;

> *The over-work of the employed part of the working class swells the ranks of its reserve, while conversely, the greater pressure that the reserve by its competition exerts on the employed workers forces them to submit to over-work and subjects them to the dictates of capital. The condemnation of one part of the working class to enforced idleness by the over-work of the other part, and vice versa, becomes a means of enriching the individual capitalists, and accelerates at the same time the production of the industrial reserve army on a scale corresponding with the progress of social*

accumulation.[8]

On the other hand, an increasing surplus population serves to drive down the price of wages as individuals become more desperate for work;

> *Taking them as a whole the general movements of wages are exclusively regulated by the expansion and contraction of the industrial reserve army . . . by the varying proportions in which the working class is divided into an active army and a reserve army, by the increase or diminution in the relative amount of the surplus population, by the extent to which it is alternately absorbed and set free.*[9]

By exacerbating this competition via the introduction of 'the camp,' industry stands to rapidly drive down the wages of their workers; which might explain why institutionalized camps appear consistently in the primary resource sector whose employees, Marx admits, belong to the best paid categories of the British proletariat.[10] The same statement rings true today in the Oil Sands, where high salaries attract labour from across the country, most notably across the Maritime provinces which have struggled with above average unemployment levels.

From a strictly technological perspective, the developments of the twentieth century have enabled the company camp to expand its field of influence globally; drawing from a planetary (rather than a local or regional) surplus labour reserve and dispersing an equally

8 Karl Marx, *Capital Volume 1*, 789.

9 Ibid, 790.

10 Ibid, 820.

global population back outwards when working contracts come to their prefigured end. Commercial air travel has increased the frequency of rotational work cycles, while telecommunications technologies have made it possible for working individuals to remain socially connected during their working periods. In the field of architecture, industrialized construction methods have imbued the camp with a sense of urgency allowing companies to respond immediately to labour demands regardless of geographic location. This globalization vis-a-vis the contemporary work camp has expanded (perhaps infinitely) the field from which isolated production sites can draw new labour, and has thus exacerbated the competition relation between a now definitively local population of employed and extensively global population of the unemployed.

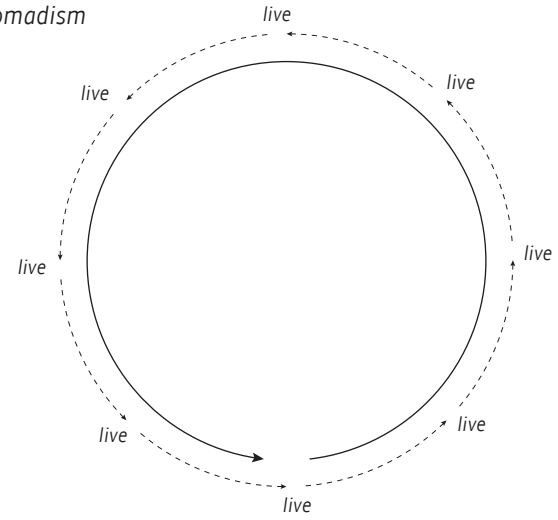
This particular theorization of the modern camp (which extends its reach globally, as opposed to the historical model which was limited in scope) necessitates a return to Marx's use of the term 'nomad'. Within the capitalist mode of production the 'nomad' (especially today) performs an essential function; he/she markets his/her labour power upon a potentially limitless spatial horizon, and mobilizes his/her capacity to work (as a skilled or unskilled worker) with similar freedom. Marx succinctly characterizes the value of mobility in *The General Law*;

> *. . . there must be the possibility of suddenly throwing great masses of men into the decisive areas* [of production] *without doing any damage to the scale of production in other spheres. The surplus population supplies these masses.*[11]

11 Karl Marx, *Capital Volume 1*, 785.

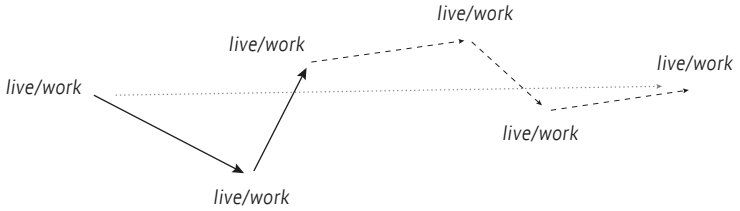
fig. (4.02) **[right]** Shown right, an exploration of differing forms of nomadism. Primitive nomadism is generalized here as an annual cycle, which is repeated year after year. For Marx, the term nomad is used to describe a more linear movement, as displaced workers travel (with their families) from worksite to worksite. The nomadism institutionalized within the contemporary work camp is – conceptually – a hybrid of these two prior definitions. The contemporary worker cycles between the camp and a permanent home base, but the camp is also implicated in the territorialization of resource landscapes. As such, the commute subtly changes over time, as resource exploitation extends farther afield.

primitive nomadism



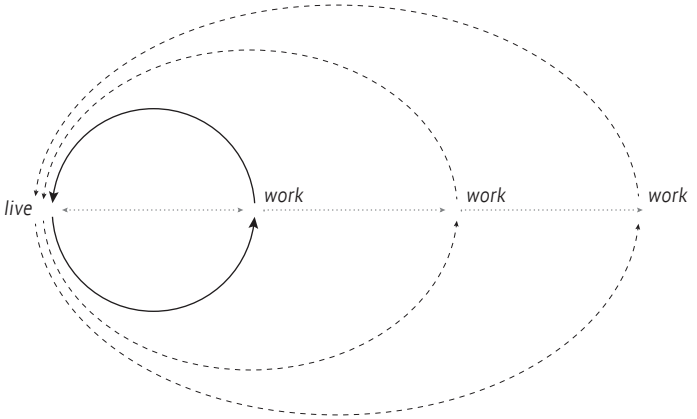
perpetual repititions of an annual migratory cycle

Marx's nomadic population



continuous forward momentum as the working individual is successively up-rooted by capital

the camp & the contemporary nomad



the live/work divide is established through the maintenance of a 'home base' and the deployment of a 'work camp', which the migrant worker cycles between

While Marx's theorization is largely intended to indicate the movements of workers from one sector of production to another, the statement reads with as much validity when conceived spatially as economically. To continue with the example of primary extractive industries, which are by their very nature geographically particular, masses of workers are commonly required travel to and from various sites of production depending on the developmental stages of industrial projects or in response to global fluctuations in the value of the exploitable resource. The *to-and-fro* migration of oil workers between Newfoundland and Alberta is one such example, where employment in one or the other province is dependent on relative expansions and contractions of oil sector work forces which respond in kind to fluctuations in the market values of various energy sector commodities.

For Marx, the critical factor is that these workers be simply available for employment; which is why the concept of a *reserve army* or *surplus workforce* is emphasized through the whole of Chapter 25. They exist simply as a mass of the unemployed, ready to be swept up by capital at a moment's notice but regulating – in the meantime – the movements of wages and contributing to the overwork of the employed. Today, it is imperative that the nomadic function of the surplus pool (and ultimately the architectural typology of the camp) be critiqued for what it really is: a means of expanding the competitive influence of the labour reserve globally.

As the importance of the nomadic function of the working class is emphasized, an equally important contradiction in the construction of company owned housing is revealed. The holistic company town, a testament to the utopic visions of paternalistic or philanthropic industrialists, is antithetical to the operational impetus of capitalist

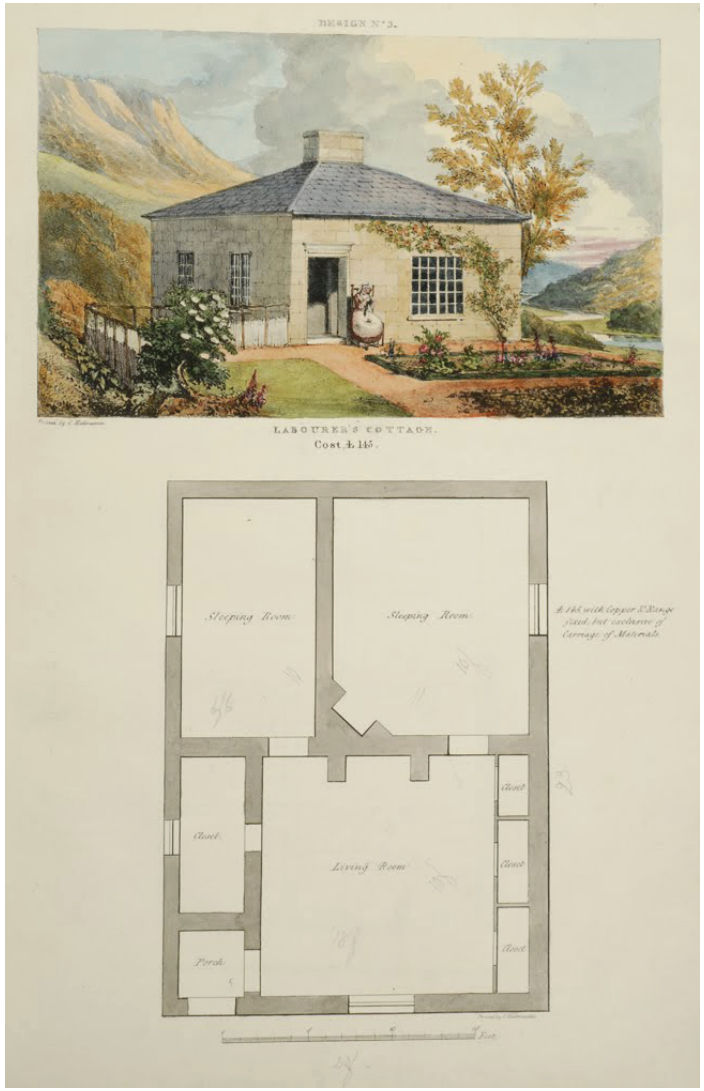


fig. (4.03) **[above]** *Labourer's Cottage,* by John Hall, from his treatise *"Novel Designs for Cottages, Small Farms and Schools,"* 1825.

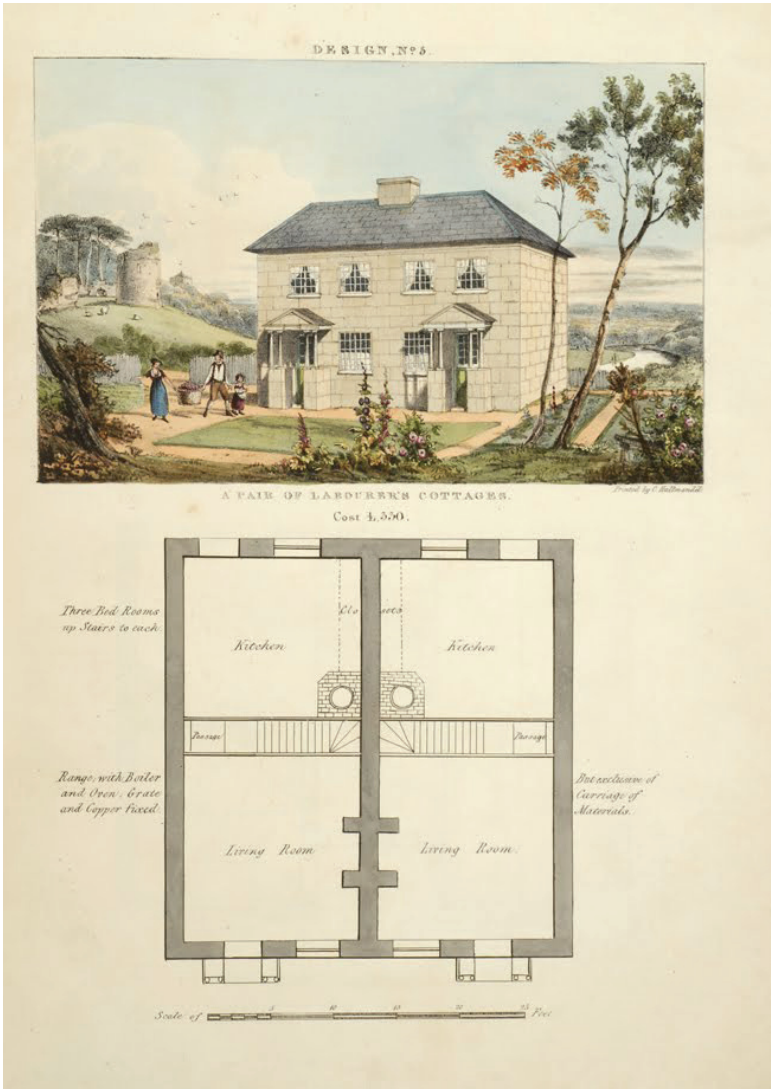


fig. (4.04) **[above]** *A Pair of Labourer's Cottages,* by John Hall, from his treatise *"Novel Designs for Cottages, Small Farms and Schools,"* 1825.

production. John Hall's idyllic treatise *Novel Designs for Cottages, Small Farms and Schools*, published in 1825, speaks to an ethical or moral imperative to construct a context for absolute social harmony and testifies to the role of the architect in engaging workforce accommodations;

> *The object is an increase in comfort and happiness to the labouring classes: an encouragement towards the attainment of a true independence, which, while it makes them superior to idleness, intemperance, and parochial relief, will tend to lessen their vices, and create a pleasurable observance of all the duties of society. In short an inducement to preserve health by the exercise of cleanliness, delicacy and industrious morality . . .*[12]

Hall's architectural plates, upon which are rendered robust stone buildings amidst idyllic pastoral scenery (see figures 4.03 & 4.04, left), imply a certain permanence which Marx's characterization of *The General Law* contradicts. Furthermore, Hall's rhetoric reveals *Novel Towns* to be an elaborate exercise in social-engineering which engages the inhabitant-workforce as resident (as opposed to migrant, temporary) despite the hegemony of the employer-landlord, whose economic prerogative to interact with the surplus population *requires* flexibility to be realized within the company town. Marx's elaborations on both *The General Law* and the nomadic population reveal Hall's philanthropic industrialist to be the exception, *rather than the rule*, when applied to the appropriation of workforce accommodations in developed capitalist societies.

12 Stephen J. Gertz, *A Bucolic Paradise for the Working Class 1825*, accessed Apr. 2014 (www.davidbrassrarebooks.com/?p=158) paragraph 5.

In summary, the current paradigm of camp construction has metamorphosed the logic of *The General Law* into a new spatial praxis which expedites the various interactions between capital and the surplus population.

THE INTENSIFICATION OF LABOUR

In Chapter 25 of *Capital*, Marx demonstrates that capitalist accumulation naturally produces a population of nomadic workers, whose function is to sequentially *fall into* and be *removed from* the surplus population as a means of both ***(a)*** regulating the price of wages and ***(b)*** compelling the working population to submit to over-work. The concept of over-work is conceptually linked to the notion of the *intensity of labour power*, which, in *Capital*, is largely mediated through developments in machine production and reductions in the length of the working day. The notion of a new spatial praxis manifest as camp (the construction of definitively temporary accommodations through which workers cycle on a regular basis) identifies a third mechanism through which the intensity of labour is mediated: the urban project itself.

In *Chapter 15: Machinery and Large Scale Industry,* Marx dedicates a short section to elaborating on the causal nature of exploitations following from the development of machine production, in which is the subsection titled '*Intensification of Labour.*' Intensification imposes on the worker:

> *. . . an increased expenditure of labour within a time which remains constant, a heightened tension of labour-power, and a closer filling-up of the pores of the working day, i.e. a condensation of labour, to a degree which can only be attained within the limits of the shortened working day. This compression of a greater mass of labour into a given period now counts for what it really is, namely an increase in the quantity of labour.*[13]

It is because of Marx's prior simplification of the wage into a '*price per day*' that intensity counts only as a change in the quantity of labour (even when considered from the perspective of the isolated worker). In Marx's example, the legally accepted '*working day*' is reduced by a number of hours, while the daily price of wages remains the same. The result is a ***relative*** increase in the wage price; since, divided hourly, the individual worker is now earning more per hour, despite earning the same wage over the course of the whole day. In return for this relative increase in the wage, the individual worker is required to produce the same quantity of exchange values in a reduced time-frame; or more simply put must work *harder* or with greater intensity. From here, the value of shift work – in which groups of workers are cycled through the factory for shorter bouts of prolonged productive activity – is rendered with some clarity. The working day is shortened such that – for example – 2 working days worth of products (2 groups of shift workers) might be condensed into a single day (two twelve hour long shifts, or three eight hour long shifts). The concept of intensity is relatively simple; more products are brought to market in a constant time-frame as a result of harder work.

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13 Karl Marx, *Capital Volume 1*, 534.

We need not necessarily concern ourselves here with the concept of intensity applied to the individual worker since – in relation to the modern work camp – intensity is quite literally manifest as an increase in the quantity of labour (i.e. the capability to immediately accommodate additional workers, or the *numerical flexibility* of the working population). However, this elaboration has not been only semantic, since Marx identifies a distinct difference between the concepts ***productivity*** and ***intensity***;

> *Increased intensity of labour means increased expenditure of labour in a given time. Hence a working day of more intense labour is embodied in more products than is one of less intense labour, the length of each working day being the same. Admittedly, an increase in the productivity of labour will also supply more products in a given working day. But in that case the value of each single product falls, for it costs less labour than before, whereas in the case mentioned here that value remains unchanged, because each article costs the same amount of labour as before.*[14]

This is the fundamental importance of *intensity* – as it might govern the production process – in contradistinction to *productivity*: changes in the intensity of labour have no lasting effect on the status quo of production in a particular market sector, since the increased quantity of labour is always compensated through additional wages (whether relative, as in the shortened length of the working day, or real). Unlike the inclusion of machinery, which forms a part of the constant capital embodied in the

14 Karl Marx, *Capital Volume 1*, 660.

production process and increases the efficiency of the production process, quantitative changes in the supply of labour have no effect on the value of the commodities produced. In addition, alterations in the intensity of labour can just as easily (and harmlessly) function in the opposite direction – to produce quantitatively less product in turbulent economic circumstances – while productivity is always manifest as a permanent improvement.

This line of argumentation is particularly useful in thinking about the early economization of the Oil Sands and the viability of unconventional oils globally. Without a doubt, corporations operating in the Oil Sands have prioritized *productivity* insofar as the costs associated with the extraction, production, and refinement of Alberta bitumen remain high relative to conventional sources of oil. It is industry's prerogative to drive the cost of production as low as possible in an attempt to bring synthetic oil products on par with global alternatives (as a means of expanding the market for synthetic oils). It stands to reason then, that producers operating in the Oil Sands are incentivised to operate at more-or-less maximum possible productivity. Yet the realities of the geologic formation and the nature of the raw material are such that the cost of Tar Sands production will remain higher than the competition for the foreseeable future. As a result, the Tar Sands are uniquely reliant on the world market. When the price of oil is high, there must be the possibility of increasing the *intensity* of oil operations, such that the maximum quantity of extracted material can be sold at the highest possible price. Falling oil prices have precisely the opposite effect; it must be possible to decrease the intensity of the production process with some immediacy. The non-renewable resource remains in-ground until it can be sold at a higher value, and the company's losses are minimized.

In this way, Marx's notion of intensity prefigures David Harvey's fascination with the concept of flexibility in the post-modern capitalist world. The 'numerical flexibility' of working populations – described by Harvey as the quintessential characteristic of the post-modern working class – is predicated upon a real need for variable intensity with respect to the production process.

INHABITING THE TAR SANDS 2.0

Unfortunately, the statistical resources needed to apply these economic theories to today's camp are extremely limited. Aside from the 2012 Wood Buffalo census, there have been only a handful of public studies (commissioned by the Oil Sands Developers Group and the Provincial Government) which engage the camp with any level of sophistication. Nonetheless, there is some evidence to suggest that the rapid deployment of work camps has been occurring as a result of the kinds of economic scenarios described – more than a century ago – within Marx's *Capital*.

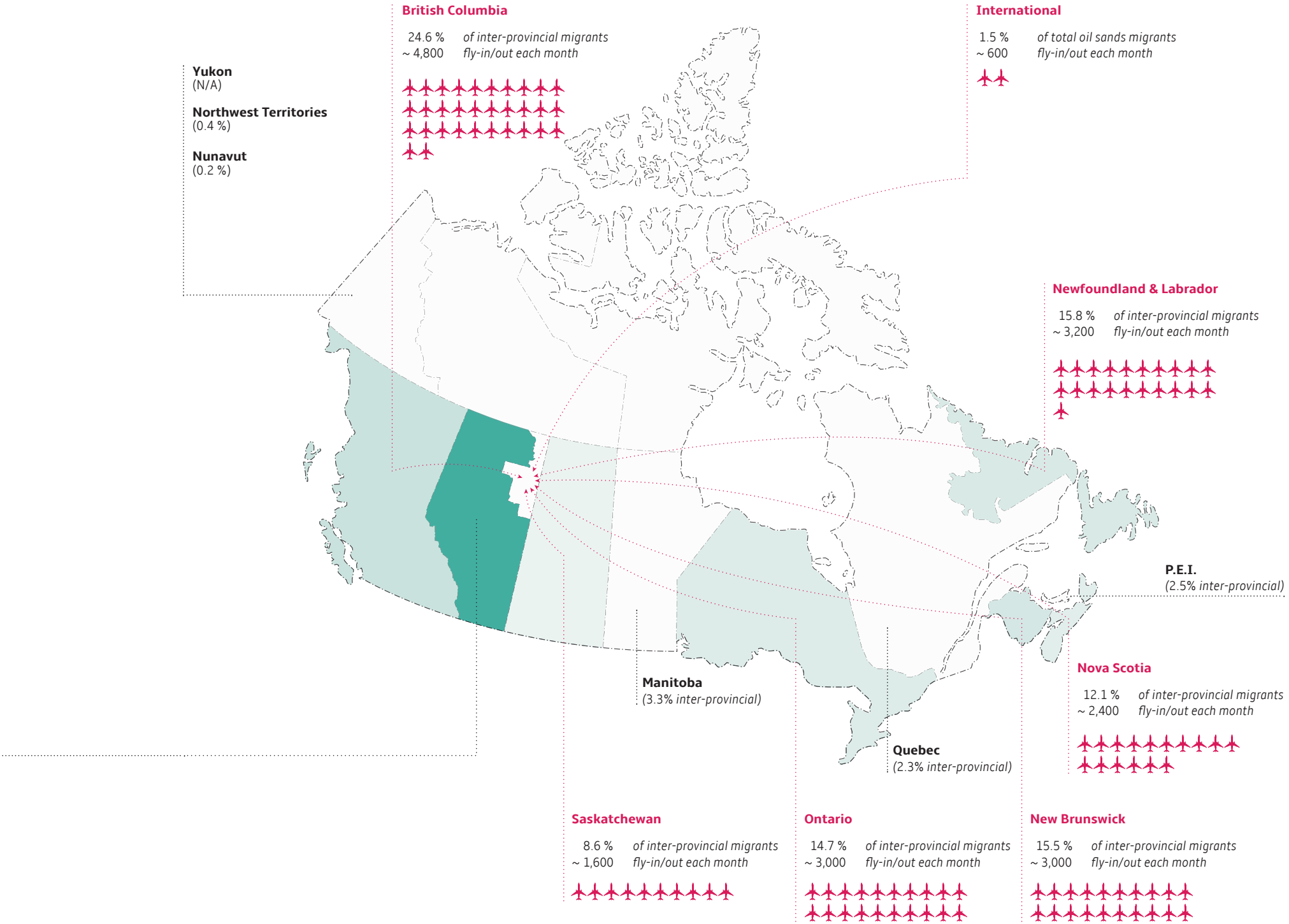
A *Nichols Applied Management* study conducted in 2007 (and submitted to the *Oil Sands Developers Group*) found that between 2003 and 2007, the proportion of Oil Sands workers migrating from within the Province of Alberta fell from 71% to 52%, while out of province migration increased from 24% to 44% (this while the total number of migrant workers was undergoing a substantial increase; from just over 8 thousand workers in

fig. 4.05 *Oil Sands Migration (by Province)*

Alberta

43 % *of total migrants*
~ 17,200 *fly-in/out each month*




British Columbia
24.6 % of inter-provincial migrants
~ 4,800 fly-in/out each month
International
1.5 % of total oil sands migrants
~ 600 fly-in/out each month
Yukon
(N/A)
Northwest Territories
(0.4 %)
Nunavut
(0.2 %)
Newfoundland & Labrador
15.8 % of inter-provincial migrants
~ 3,200 fly-in/out each month
P.E.I.
(2.5% inter-provincial)
Nova Scotia
12.1 % of inter-provincial migrants
~ 2,400 fly-in/out each month
Manitoba
(3.3% inter-provincial)
Quebec
(2.3% inter-provincial)
Saskatchewan
8.6 % of inter-provincial migrants
~ 1,600 fly-in/out each month
Ontario
14.7 % of inter-provincial migrants
~ 3,000 fly-in/out each month
New Brunswick
15.5 % of inter-provincial migrants
~ 3,000 fly-in/out each month

2002, to 18 thousand in 2007).[15] This trend – the increasing reliance on a geographically wider labour pool with respect to Oil Sands work – has continued since the Nichols study: according to the 2012 Census, 50% of migrant workers are now traveling to the Regional Municipality of Wood Buffalo from out of province, while only 43% are travelling from within Alberta.[16] 46% of these inter-provincial migrants maintain a permanent home in the Maritimes, while British Columbia contributes the greatest of any single province at nearly 25%.[17] Figure 4.xx (previous) interprets this data as an average number of 'flights-per-month;' which spatially illustrates the regular air traffic created as a result of the Oil Sands project, and demonstrates the extent to which the camps establish a national labour pool.

As far as employee turnover is concerned, the 2012 Census found that only 37% of camp workers polled had worked in the Oil Sands for more than five years, while the remaining 63% had been employed in the region for less. Approximately 25% of respondents had worked in the Oil Sands for less than a full year, and 15% had been at work in the region for less than 6 months. This data suggests that only about 50% of oil sector employees living in camps last more than three years working in the oil patch.

In addition, the census poll reveals a massive wage discrepancy between oil sector workers living in town and those who live in

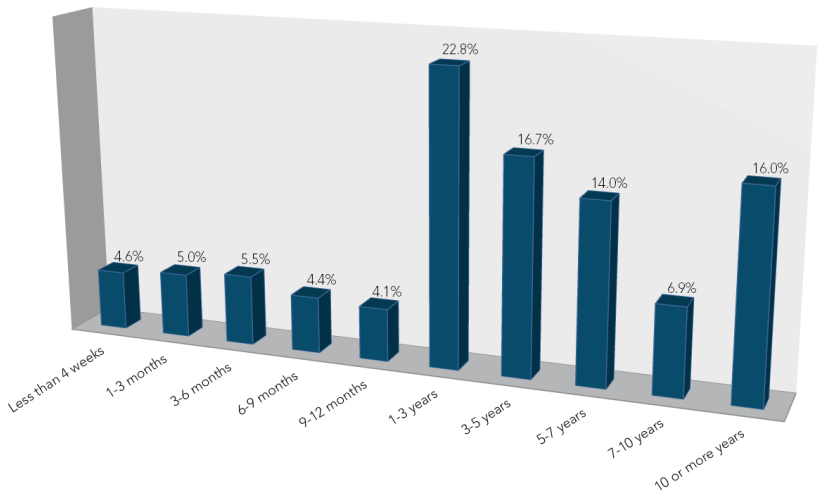


fig. (4.06) **[above]** *Length of time working in the Oil Sands, camp workers;* 2012 Census, Regional Municipality of Wood Buffalo.

15 *Final Report: AOSA Camp Study*, Nichols Applied Management, (Submitted to the Oil Sands Developers Group) 2007.

16 *2012 Census*, Regional Municipality of Wood Buffalo, 2012 (www.woodbuffalo.ab.ca/Municipal-Government/ Municipal-Archived-Census-Reports.htm), Section Five: Project Accommodations Population Count, 123.

17 Ibid.

fig. (4.07) **[right]** *Gross household income, workers living in camps;* 2012 Census, Regional Municipality of Wood Buffalo.

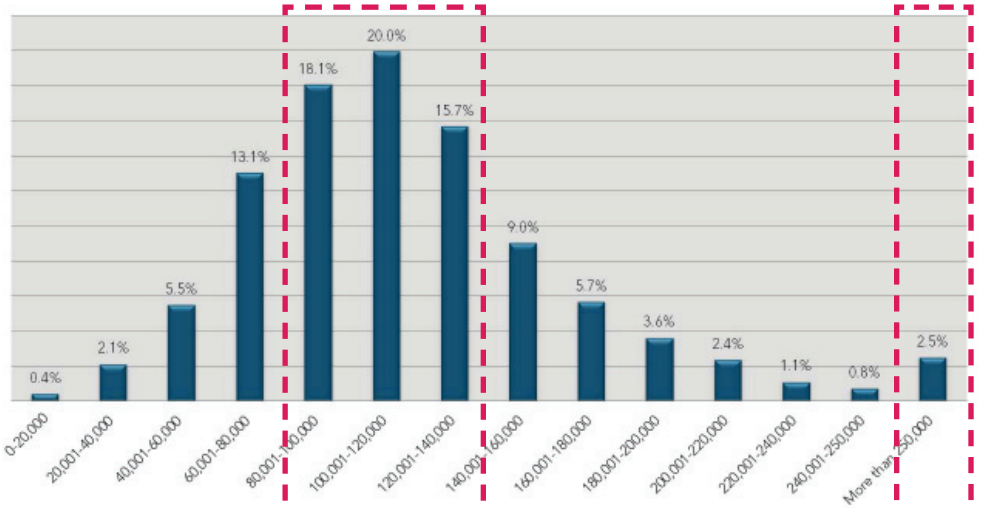
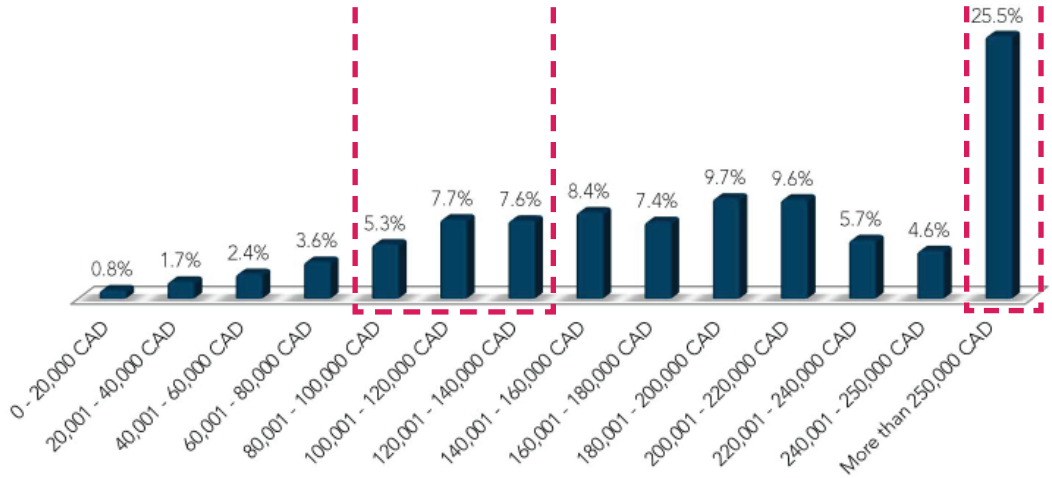


fig. (4.08) **[right]** *Gross household income, workers living in urban service area (Fort McMurray);* 2012 Census, Regional Municipality of Wood Buffalo.



remote camps. More than half (55%) of permanent residents living in the Regional Municipality of Wood Buffalo reported a gross annual household income above $180,000, with the vast majority (25.5% of the total polled) reporting incomes over $250,000. On the other hand, the majority of camp workers (53.8%) reported annual household incomes between $80,000 and $140,000. While oil sector wages are undoubtedly high regardless of the domestic circumstance of individual workers, the fact that this discrepancy even exists raises the question: what is different about working in the camps?

It may be as simple as concluding that camp-based work is of a different type than that which is carried out remotely (such as for engineers, planners and administrators), and that wages are therefore not directly comparable. On the other hand, since corporations foot the bill for all living and travel expenses related to camp work, the discrepancy strongly suggests that camp-based wages have been adjusted to compensate employers; and that those living in camps are being held directly responsible for the costs associated with their accommodations. Of course the data also suggests that the cost of living is so high that only those earning more than $180,000 annually can afford to settle more permanently in the region; and that, in addition, those earning less are more-or-less forced to adopt life in the work camps. Finally, taking into account the high turnover rate of camp workers, the seniority of permanent residents might play some role in the discrepancy between camp and town wage rates.

In any case, the census findings are simply too vague to draw any conclusive connections between the wages of migrant Oil Sands workers and any exploitations which might be occurring within the context of the camp.

All of this information implicates the camp in the kinds of economic strategies playing out within Marx's text. As a company owned and operated accommodations alternative, the camp positions workers precariously between employment and the surplus labour pool, and accelerates the interactions (between employer and employee) which follow from '*The General Law*.' As a remote and relatively autonomous settlement type, the camp institutionalizes a nomadic working regime and engenders novel transportation networks; which have consequently expanded the field from which labour is alternately collected and dispersed. And finally, as the mechanism for producing a numerically flexible working population, the camp permits companies to modulate the intensity of on-site labour, while regulating – in the mean time – the wages surrounding the industrial project.

CONCLUSIONS

Over the course of this thesis exploration, I have interrogated the paradigm of camp deployment as it relates to the corporate organizational ethos in Canada's Oil Sands. Three key conclusions are emphasized throughout the work:

1. Conventional urban development (vis-à-vis population growth in Fort McMurray) has become increasingly obsolete in the face of unprecedented industrial expansion.

2. The deployment of mass produced, pre-fabricated company work camps – in lieu of permanent urban development – constitutes an alternate urban project, which is now the predominant organizational strategy for accommodating perpetual workforce growth.

3. The camp typology – which has long been regarded as the necessary (or inevitable) consequence of industrial expansion – is in fact an intentional organizational tool which uproots the working individual, expels the family unit, and disperses the greater working population in the interest of an explicit economic agenda.

In Chapter 1, *'Inhabiting the Tar Sands,'* I explore the origins of camp deployment by emphasizing the role of the global context in initiating the exploitation of Alberta bitumen. Using David Harvey as a theoretical foundation, I demonstrate how the precarious market space for synthetic oils has engendered an increasingly 'flexible' local labour structure; which describes a workforce capable of rapid numerical expansion (in times of economic prosperity) and contraction (during crisis scenarios). In turn, Harvey's emphasis on the concept of 'flexibility' helps to elaborate on the functional failings of Fort McMurray, which is (like all 'company town' sites) characteristically rigid: at once too slow in accommodating rapid workforce growth and too centralized to accommodate geographic extensions of the industrial territory. The emergence of contemporary work camps, which position localized populations of workers on remote industrial sites, is inexorably linked to these two factors: (a) the urban crisis in Fort McMurray and (b) the changing organizational prerogatives of corporate enterprise. As such, the camp assumes an active role within the region's overarching developmental strategy and has become the corporate mechanism for fashioning a flexible workforce outside the boundaries of the traditional 'company town.'

In Chapter 2, *'The Company Camp,'* I deconstruct the architectural project of the contemporary work camp, and conclude that today's camps are typologically distinct from their historical predecessors. The corporate paternalism which engendered the 20th century company town has been replaced by a reductive neoliberal logic which excludes the family unit, homogenizes workforce accommodations, and institutionalizes 'migrant' or 'transient' work. These prerogatives are realized within the design of the contemporary camp: a mass produced, pre-fabricated, building typology which is replicable, mobile, flexible and incredibly efficient. When leveraged against the organizational agency of the working class,

the camp appears as a subversive socio-spatial intervention which upsets the balance of the labour-capital power relation in favour of the employer-landlord.

The third chapter is dedicated entirely to a spatial accounting of work camps within the Athabasca Oil Sands Area, and is intended to serve as a public record of the current scale and scope of camp deployment. The completed catalogue raises questions about the efficacy of local census documentation and the viability of pre-existing permanent communities in the region (including First Nations territories), while demonstrating the prominence (and indeed dominance) of the camp typology within the greater regional context. The catalogue and associated mapping exercises serve as a precedent for future investigations of company work camps, and are intended to serve as a manifesto for approaching the camp(s) as an interconnected whole (rather than as isolated instances of architectural intervention).

Finally, in Chapter 4, *'Accumulation via Nomadization,'* an exploration of some of Marx's key concepts make it clear that the camp apparatus operates at a macro scale; one which is perhaps so broad in scope that the consequences of camp deployment vis-à-vis the individual worker (or even whole regions' worth of workers) are likely to go unnoticed. The camp – as economically charged organizational apparatus – destroys any prior spatial limits in the search for labour power, and (in so doing) systematically increases wage competition wherever work camps are deployed. At the same time, the camp enables corporations to modulate the intensity of on site work, by producing a precarious population of workers who can be easily hired and fired depending on external (read: global) economic circumstances.

Taking these factors into consideration, the future of workforce accommodations in the Oil Sands (and indeed around the world) is discouraging. From the perspective of corporate enterprise, the camp is ideal; it produces a precise subjectivity (that of the migrant worker) with distinct economic advantages relative to more permanent labour groups. As such, propositions to supplant the present camp typology with some alternate extra-urban scheme (such as the one proposed in Alberta's Infrastructure Plan) are likely to meet with resistance on the part of corporate operators. In fact, it is probable that the unhindered deployment of company work camps will continue well into the future; since the social, economic and political factors exacerbating the local crisis in Fort McMurray have yet to be alleviated. As the greater industrial project continues to extend into the Canadian hinterland – and the population of camp workers continues to grow – it will become increasingly difficult to return to Fort McMurray as the region's dominant urbanism.

Additionally, this exploration of the camp is conceptually linked to an ongoing academic project by Neil Brenner and Christian Schmid; who criticise the discipline of 'urban theory' for its exclusive focus on instances of densification, intensification and agglomeration.[1] Brenner and Schmid propose an urban theory which is planetary in scope; operating through a simultaneous process of implosion-explosion.[2] The *ad nauseam* deployment of company work camps is clearly an explosive urban process:

1 Neil Brenner and Christian Schmid, "The 'urban age' in question" *International Journal of Urban and Regional Research*, 38, 3, 2014, 731-755.

2 Neil Brenner, editor, *Implosions/Explosions: Towards a Study of Planetary Urbanization* (Berlin: Jovis, 2013).

while the population of oil sector workers is undoubtedly growing, the pattern of that growth is diffuse rather than dense. In addition, the cyclical commute of transient workers between the camp and some more permanent home-base describes (in a microcosmic sense) a process of simultaneous implosion-explosion, not dissimilar from the one Brenner and Schmid have attempted to characterise at the macro scale. An exploration of the contemporary work camp as it relates to the theory of 'Planetary Urbanization' is one possible avenue for the future development of this thesis topic.

Finally, over the last eight months, overproduction of conventional oil resources in the Middle East has initiated in a dramatic decrease in the global price of oil. Alberta's oil companies have begun the process of downsizing: cancelling proposals to expand current facilities, cutting back on production, and firing construction, operations and maintenance staff. While it seems absurd to suggest that the current economic climate could have been anticipated at the outset of this thesis work, it is clear that the camp has been adopted with exactly this kind of situation in mind. The fragile market for Alberta bitumen and the functional prerogatives of the contemporary company work camp are inexorably intertwined; and are as relevant to workforce organizations today as they were at the outset of the Oil Sands endeavour.

BIBLIOGRAPHY

BOOKS & ARTICLES

_____. "780 tonne oil sands vessel hits Highway 63," *Alberta Oil Magazine*, April 1, 2013. Accessed March 11, 2014. www.albertaoilmagazine.com/ 2013/04/oilsands-megamodules-fort-mac/.

_____. "Alberta's largest bridge deck opens in Fort McMurray." *Government of Alberta*, Oct. 26, 2011. alberta.ca/ announcements.cfm.

_____. "Canada's Oil Sands Shifting to Second Generation Reclaimation, Mammoth Machines Being Retired." *Oil and Gas Online*, Aug. 10, 1999. www.oilandgasonline.com/doc/canadas-oil-sands-shift ing-to-second-generati-0001#drag.

_____. "Major layoffs expected after Alberta projects put on hold." *Journal of Commerce*, Feb. 11, 2009. www.journalofcommerce.com/Home/News/2009/2/Major-layoffs-expected-after-Alberta-projects-put-on-hold-JOC032458W/.

_____. "New Regina work camp has a hockey rink and theatre." *Canadian Business*, April 2, 2012. canadianbusiness.com/lifestyle/new-regina-work-camp-has-a-hockey-rink-and-theatre/.

_____. "The Long Road." *Alberta Construction Magazine*, Jun. 1, 2013. www.albertaconstructionmagazine.com/index.php/issues/8-summer-2013/3-the-long-road.

_____. "Undercover at the Tar Sands: What it's really like working for Big Oil." *Rolling Stone*, August 28, 2013. rollingstone.com/politics/news/undercover-at-the-tar-sands-what-its-really-like-working-for-big-oil-20130828.

Barnes, Dan. "Profile: Karl Clark, the scientist." *The Edmonton Journal*, January 7, 2014. www.edmontonjournal.com/business/Profile+Karl+Clark+scientist/9123303/story.html.

Bird, Lindsay. "Working Full Time: The work camps of Fort McMurray." *The Dominion* 48 (2007). www.dominionpaper.ca/articles/1383.

Borges, Marcelo J., and Susana B. Torres, ed. *Company Towns: Labour, Space, and Power Relations across Time and Continents*. New York, NY: Palgrave MacMillan, 2012.

Bradwin, Edmund. *The Bunkhouse Man: A study of work and pay in the camps of Canada 1903-1914.* Toronto, ON: University of Toronto Press, 1972.

Brenner, Neil, ed. *Implosions/Explosions: Towards a Study of Planetary Urbanization.* Berlin: Jovis, 2013.

Brenner, Neil, and Christian Schmid. "The 'urban age' in question." *International Journal of Urban and Regional Research* 38 (2014): 731-755.

Carrington, Kerry, and Margaret Pereira. "Assessing the social impacts of the resources boom on rural communities." *Rural Society* 21 (2011): 2 - 20.

Chastko, Paul. *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*. Calgary, AB: University of Calgary Press, 2004.

Davidson, Debra J., and Mike Gismondi. *Challenging Legitimacy at the Precipice of Energy Calamity*. New York, NY: Springer, 2011.

Fillion, Kate. "Interview with Mayor Melissa Blake." *MacLean's Magazine.* Accessed March 12, 2014. www.theoldfortamusingfromtheoilsands.blogspot.ca/2013/01/interview-with-melissa-blake.html.

Foster, Peter. *Sorcerer's Apprentices: Canada's Super-Bureaucrats and the Energy Mess.* Toronto, ON: HarperCollins, 1982.

Gerson, Jen. "Alberta's Highway 63, an Oil Sands lifeline, has seen 46 deaths in five years." *The National Post*, April 30, 2012. news.nationalpost.com/2012/04/30/albertas-highway-63-an-oil-sands-lifeline-has-seen-46-deaths-in-five-years/.

Gertz, Stephen J. *A Bucolic Paradise for the Working Class 1825*. Accessed Apr. 2014. davidbrassrarebooks.com/?p=158.

Hailey, Charlie. *Camps: A Guide to 21st Century Space*. Cambridge, MA: MIT Press, 2009.

Harvey, David. *The Urbanization of Capital: Studies in the History and Theory of Capitalist Urbanization.* Baltimore, MD: Johns Hopkins University Press,1985.

Harvey, David. *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Exchange.* Oxford, England: Basil Blackwell, 1990.

Harvey, Daivd. "Flexible Accumulation through Urbanization." *Perspecta* 26 (1990).

Hubbert, M. King. *Nuclear Energy and the Fossil Fuels.* (paper presented at the spring meeting of the American Petroleum Institute, San Antonio, Texas, March 7-9, 1956) www.hubbertpeak.com/hubbert/1956/1956.pdf.

Kemp, Geoffrey, and Robert E. Harkavy. *Strategic Geography and the Changing Middle East.* Washington, D.C.: Brookings Institution Press, 1997.

Knight, Rolf. *Work Camps and Company Towns in Canada and the U.S.* Vancouver: New Star Books, 1975.

Marx, Karl. *Capital Volume 1: A Critique of Political Economy*. Translated by Ben Fowkes. London: Penguin Books, 1990.

Marx, Karl, Friedrich Engels, Samuel Moore, and David McLellan. *The Communist Manifesto*. Oxford: Oxford University Press, 1992.

Masson, Richard and Brian Remillard. *Alberta's New Oil Sands Royalty System.* Edmonton, AB: Alberta Dept. of Energy, 1996.

McKenzie-Brown, Peter, et al. *The Great Oil Age: The Petroleum Industry in Canada.* Calgary, AB: Detselig Enterprises Ltd., 1993.

Shinn, Charles H., *Mining Camps: A Study in American Frontier Government.* Gloucester, Mass: Peter Smith, 1970.

Thomas, Mike. "Writing about conditions in Suncor's Tar Sands work camps got me fired," *www.rabble.ca,* October 15,

2010. www.rabble.ca/news/2010/10/writing-about-conditions-suncor's-tar-sands-work-camps-got-me-fired.

VanderKlippe, Nathan. "Camp life: Oil sands camps go five-star," *The Globe and Mail,* September 15, 2010. www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/oil-sands-camps-go-five-star/article4326109/.

Wittmeier, Brent. "Life in a northern work camp: Huge 'shadow population' of oil workers flies in, flies out." *The Edmonton Journal*, January 7, 2014. www.edmontonjournal.com/business/Life+northern+work+camp+Huge+shadow+population+workers+flies+flies/9219752/story.html.

REPORTS

_____. *2012 Census*. Regional Municipality of Wood Buffalo, 2012. www.woodbuffalo.ab.ca/Municipal-Government/Municipal-Archived-Census-Reports.htm.

_____. *2012 Census: Project Accommodations Profile*. Regional Municipality of Wood Buffalo, 2012. www.woodbuffalo.ab.ca/Municipal-Government/ Municipal-Archived-Census-Reports.htm.

_____. *2014-2023 Key Highlights: Construction and Maintenance Looking Forward Alberta Oil Sands*. BuildForce Canada, accessed May 8 2014. www.constructionforecasts.ca/sites/forecast/files/highlights/en/2014_AB_oil_sands_Constr_Maint_Looking Forward.pdf.

_____. *Alberta Oil Sands Industry Quarterly Update: Winter 2013*. Government of Alberta, accessed May 8 2014. www.albertacanada.com/files/albertacanada/ AOSID_QuarterlyUpdate_Winter2013.pdf.

_____. *Alberta's Clean Energy Future: Reclamation*. Government of Alberta, 2012. Accessed May 8 2014. www.oilsands.alberta.ca/reclamation.html.

_____. *Comprehensive Regional Infrastructure Sustainability Plan: Athabasca Oil Sands Area*. Edmonton, AB: Government of Alberta, 2011.

_____. *Crude Oil: Forecast, Markets and Transportation*. Canadian Association of Petroleum Producers, June 2014,

Accessed Aug. 7 2014. www.capp.ca/library/publications/crudeOilAndOilSands/pages/pubInfo.aspx?DocId=247759.

_____. *Final Report: AOSA Camp Study*. Nichols Applied Management, (Submitted to the Oil Sands Developers Group) 2007.

_____. *Housing Now: Prarie Region, Housing Market Information.* Canada Mortgage and Housing Corporation, January 2014. www.cmhc-schl.gc.ca/en/hoficlincl/homain/foan/index.cfm.

_____. *Oilsands Review Project Status August 2014.* Oilsands Review, Aug. 2014. oilsandsreview.com/ProjectList.asp.

_____. *Population and Dwelling Counts 2011 and 2006 censuses.* Statistics Canada, 2011. www12.statcan.gc.ca/census-recensement/2011/dp-pd/hlt-fst/pd-pl/index-eng.cfm.

_____. *Rental Market Statistics.* Canada Mortgage and Housing Corporation, Fall 2013. Accessed March 12, 2014. www.cmhc-schl.gc.ca/en/hoficlincl/homain/foan/index.cfm.

_____. *The Decade Ahead: Oil Sands Labour Demand Outlook to 2022*. Petroleum Human Resources Council of Canada, Labour Market Information. Accessed May 8 2014. www.petrohrsc.ca/media/42582/oil_sands_labourdemandoutlook_to_2022_fact_sheet.pdf.

ONLINE CONTENT

_____. *Alberta's Leased Oil Sands Area*. Resource Mapping & Analysis (JS), February 2014. Accessed May 8 2014. www.energy.gov.ab.ca/LandAccess/ pdfs/OSAagreeStats.pdf.

_____. "Capital of the Tar Sands." *Alberta's Real Estate Heritage*. 2008. www.albertsource.ca/realestate/regions/fortmac/tarsands.html.

_____. *Facts about Alberta's oil sands and its industry*. Oil Sands Discovery Centre. Accessed August 2014. www.history.alberta.ca/oilsands/resources/resources.aspx.

_____. *Location.* Bigstone Cree First Nation, 2013. Accessed July, 2014. www.bigstone.ca/content/location-1.

_____. *Total Oil Sands Production Graph*. Alberta Energy Regulator: Oil Sands Information Portal. Accessed May 7 2014. www.environment.alberta.ca/apps/ OSIPDL/Dataset/Details/46.

LEGISLATION

_____. *Alberta Building Code*, 2006 (Volume 2 Division B).

_____. *Architects Act* (RSA 2000 Ch A-44).

_____. "Construction Camp Rules and Regulations: For construction camp accommodations," *Building Trades of Alberta*, 2011-2018. Accessed January 1, 2015. www.ualocal179.com/member_agreements.php.

_____. *Public Health Act, Work Camps Regulation* (Alta. Reg.218/02)