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SIBERIAN URBANIZATION
SINCE STALIN

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During the three decades of the post-Stalin era, investment priorities and development strategies toward Siberia, rhetoric notwithstanding, reinforced and strengthened Siberia's traditional role as a colonial periphery to the European core. The structure for the controlling and exploiting of this colonial relationship continues to be, as it has been for centuries, the settlement system, which has come to be dominated by a limited number of large urban agglomerations. This study examines the development of Siberia's settlement system in historical and global perspective as a basis for analyzing contemporary trends. It then provides a regionalization scheme, based on concentration of population, kinds of economic activities, and geographic orientation. Closely associated with this regionalization scheme is the identification of 24 urban agglomerations, in which past Siberian development has been concentrated, and in which future growth will most likely be focused. The study concludes with the presentation of several possible scenarios for future development, each of which correlates to different levels of increased interaction in the world economy, as well as varying degrees of success for economic restructuring in the USSR. To
one extreme, the study suggests that there could be little impact and Siberia, as a whole, will continue simply as a colony of the Soviet state. To the other extreme, this study suggests that economic restructuring and greater global interaction, especially with the Pacific Basin, could lead to greater economic, and possible political, independence for parts of Siberia in the 21st century.

The first part of the study examines Siberia's role as a colony of European Russia by arguing for the utility of two methodological perspectives -- one global, the other historical. A global perspective provides context for examining how local and regional factors interact with national and international processes to produce a human geography that is a blend of common and unique characteristics. A global perspective demands an historical perspective as well. Both lay essential groundwork for understanding contemporary patterns of development and interaction. Both perspectives must be utilized to fully understand Siberia's changing role as a resource frontier to the Russian Empire and the Soviet state.

The second part of the study examines Siberian urbanization in the post-Stalin era. In addition to setting the geographical context for the development of Siberia, this part offers two original contributions to the study of Soviet Siberia. First, it provides a regionalization scheme that delineates ten economic
regions. And then, closely related to the regionalization scheme, 24 major urban agglomerations are identified and briefly described. Due to a lack of data, this part of the analysis remains incomplete. Yet, it is still useful because basic trends can be identified by using the data that are available, and because the framework has now been structured for future analysis.

The geographical context provides the basis for defining ten economic regions, based on concentration of population, kinds of economic activities and geographical orientation. Closely associated with these regions are 24 urban agglomerations, which this study identifies. The growth of these urban agglomerations in the post-Stalin era parallels growth trends, as previously discussed, for urban Siberia as a whole. This is not surprising given that 52 of Siberia's 66 cities with populations of at least 50,000, including all cities of 100,000, are within urban agglomerations. These 52 cities account for 62 percent of the total urban population of Siberia's 208 cities and 684 urban-type settlements.

When we divide the urban agglomerations into central cities and satellite cities, several interesting trends are revealed in this respect. All 25 central cities showed healthy positive growth between 1959 and 1985. Together they showed an increase in population of just over 5.2 million (5.5 to 10.7 million), or
95 percent, which is substantially higher than the relative urban increase for Siberia (78 percent) or the Soviet Union as a whole (80 percent). These 25 central cities alone accounted for 54 percent of the total increase in urban population for Siberia between 1959 and 1985.

There was much greater diversity for the 27 satellite cities for which we have data for both years. Total growth for these cities was 958 thousand (1,995 to 2,953), an increase of 48 percent, which further supports the contention that most of the growth was concentrated in the central cities. Of these 27 cities, five actually showed decreases in population. In addition, there were 10 satellite cities with populations in the upper 20s to mid-30s in 1959 that had not reached 50,000 by 1985.

What we are witnessing is exactly the opposite of the phenomenon experienced by US metropolitan areas in the 1970s and 1980s, now referred to as suburbanization. Metropolitan areas experienced healthy growth at the same time that central cities were declining in population. In the Soviet Union in general, and Siberia in particular, the growth of the central cities was the prime contributor to the growth of the agglomerations. Limited supplies of goods and services, better housing and other amenities continue to produce a situation in which large urban centers are the most attractive alternatives for a large proportion of the Soviet populace. One of the key challenges
facing economic restructuring is the difficulties of distributing goods and services more equally throughout the settlement system to relieve the pressure on the largest cities and to make the satellite cities an attractive alternative to "life in the big city."

The final part of the study posits alternative scenarios for future development under economic restructuring. Three basic alternatives arise. The first scenario suggests no change, or even a slowing of growth in Siberia. The second scenario suggests some impact as a result of the implementation of some aspects of perestroik, in which Siberia will play an increasingly important role. A final scenario predicts substantial changes as a result of radical reforms more closely associated with the recent initiatives of Boris Yeltsin, even to the point of economic and political independence from the European core.

For the remainder of the 20th century, however, Siberia must still wait for its role to change, for the basic nature of its development to become comprehensive, designed to benefit regional and local development at the expense of national and international markets. For now, as it has been for the entire Soviet period, Siberia remains dependent on the core for its growth, serving as a resource frontier for European Russia and the world.
INTRODUCTION

After four centuries as a colony of the Russian and Soviet empires, Siberia still retains its mystery and allure as a land of great challenges, yet even greater potential, a land of vital importance to the European core. The history of "Russian Siberia" has witnessed many changes, while the basic nature of its relationship with European Russia, a classic core-periphery relationship, has remained unchanged. A key component of this relationship has been the settlement-system, which has provided the means for control and exploitation. The structure of this settlement system initially took the form of forts and villages, which later evolved into towns and cities, and which today have grown into major urban centers and agglomerations.

In recent history, for the 30-plus years since Stalin, the basic nature of Siberia's relationship with Moscow has remained
core-periphery, and the importance of the urban settlement system has been enhanced. It is, in fact, through the urban settlement system that we can better understand Siberia's development. To a great extent, the urban settlement system serves as a reflection of Siberia's past and as a barometer of its future under the conditions of economic and political restructuring that are taking place in the Soviet Union today.

These are the premises that formed the foundation for the original research proposal, "Siberian urbanization since Stalin," for which this Final Report provides a summary of research findings. As a result, the final report presents the research findings within the framework of three major sections: (1) Siberia's role as a colony; (2) basic trends in Siberian urbanization in the post-Stalin era; and (3) the potential impact of economic restructuring on Siberia and Siberian urbanization in the future.

The first section addresses Siberia's role as a colony. It examines the nature of Siberia's relationship to the Russian Empire and Soviet state, which, in turn, provides the background and context for understanding the importance of the urban settlement system. This section greatly expands the role of methodology in the study. In this regard, the value of historical continuity and a global perspective add to our analysis of urban processes in the region.
The second section addresses basic trends in Siberian urbanization. It examines the processes of urbanization in the region since 1959. It builds upon the work of Soviet scholars Lappo and Pertsik, as well as earlier work by the author. The major contribution is the identification of 24 urban agglomerations in Siberia, and an analysis of growth trends over the past three decades. This is accomplished within the framework of a regionalization scheme that subdivides Siberia into more useful regional components.

The third section addresses the potential impact of restructuring. It presents alternative scenarios for Siberian urbanization and development in light of recent and continuing changes under perestroika. This remains the most nebulous part of the research, although possibly the most intriguing. Recent events, more closely related to Siberia's role in the RSFSR, have added new dimensions to the prognostications.
SIBERIA'S ROLE AS COLONY:
GLOBAL AND HISTORICAL PERSPECTIVES*

In order to understand urbanization and the development of the urban settlement system in Siberia, it is essential to understand the context within which it evolved. In this regard, the first section of this report represents a diversion from the original goals of the research proposal, albeit an essential diversion. Initially, this project sought to begin with the present and eventually work backwards historically. Patterns and processes in the post-Stalin period, however, were confusing or not understandable without an historical context. Especially important was an understanding of the Stalin period, which provided the framework for the post-Stalinist period. Yet, even the Stalinist framework was not without influence from its tsarist past.

Thus, in providing the foundation for analyzing Siberian urbanization since Stalin, this section discusses the value of two methodological perspectives for the analysis: (1) a global perspective, and (2) the historical context. A global perspective provides context for examining how local and regional factors interact with national and international processes to

* This section and parts of the following two sections represent expanded versions of parts of "Perestroika and Siberia: frontier resource development," which will be published as a chapter in The Soviet Union: A New Regional Geography, edited by Michael Bradshaw (forthcoming: Belhaven Press, 1991).
produce a human geography that is a blend of common and unique characteristics. A global perspective demands an historical perspective as well. Both lay essential groundwork for understanding contemporary patterns of development and interaction.

A global perspective

One of the major weaknesses of contemporary studies of the Soviet Union in general, and Siberia in particular, is a lack of a strong theoretical (conceptual) framework for examination and analysis. Sovietologists, including geographers, seem immune to the recent explosion of articles sensitive to the need for updated paradigms and models in the social sciences and human geography. A plethora of work has been published that supports the utility of employing a global perspective, also referred to as a world-systems approach, to the study of geographical problems, urbanization notwithstanding. To the present, there has been little explicit application of a global perspective to Siberian development.

Traditionally, the "Siberian experience" has been treated as a singular phenomenon, understandable only within its Russian and Soviet context. There are, of course, characteristics of the Siberian experience that are singularly Siberian. At the same time, these kinds of analyses have been blind to those aspects of Siberian development that have been in response to global
processes and the changing role of Russian/Soviet integration into the world economy. Both perspectives must be balanced to fully understand Siberia's changing role as a resource frontier to the Russian Empire and the Soviet state. Only when one puts Russian industrialization during the Stalin and post-Stalin years in the context of inter-state competition, exacerbated by ideological considerations, can one understand continued development of resources at all costs in regions of great economic inefficiency. Especially in the context of perestrojka, both local and global processes will influence Siberia's changing role in the Soviet economy.

In many contemporary studies, contacts with the outside world are given some attention, more often than not in terms of levels of foreign trade, but primarily in terms of expediting or retarding development, not as a causal factor. One of the best recent treatments of Siberian development, by Jonathan Schiffer (1989), maintains that basic motives for Siberian development were domestic, to the exclusion of global factors. This study strongly disagrees, and suggests that it is necessary to balance domestic with global factors. Without a global perspective, the puzzle cannot be solved.

The key point here is that a global perspective is important not because it replaces local factors, but because it complements them. It also suggests that many seemingly local factors are
influenced by global processes. The two, global and local, must be balanced to provide a full and complete picture. The importance of a global perspective is explicitly presented in each of the following sections on historical and geographical context.

Inclusion of a balanced approach also raises questions of scale, which is particularly important for any geographical study. In balancing global and local factors, it is necessary to address the scales of analysis. At least four can be readily identified: local, regional, national and international. Factors at each level contribute to the overall makeup of the particular urban environment, providing a balance between similarities and differences between places. National and international factors add to similarities between places, while regional and local factors add to their uniqueness. Questions of scale raise additional questions of perspective with respect to differentiating between national and foreign levels of integration.

If Siberia serves primarily as a resource colony to the European Russian core, then the difference between national and foreign may be semantic. In other words, from the point of view of the Siberians, demands from Moscow and Japan are both foreign, except for the fact that Siberia is administratively tied to Moscow. From the point of view of economic relations,
allocations of capital, and exploitation of resources, the
differences may not be so clear.

One major problem in constructing such a scenario is the
lack of data and information on flow of Siberian goods, although
some interpolations can be made. The issue concerns the basic
relationship of Siberia to the European core, wherein, from the
point of view of Siberia, exports to European Russia are simply
another form of foreign trade. In either case, exports to
European Russia or exports to foreign countries, the greatest
benefits are accumulated by Moscow, often at the expense of the
regional and local economies.

At the local and regional levels, this study calls into
question the use of the term "Siberia" to refer to all regions
east of the Urals (Figs. 1 and 2). The Soviets themselves are
quite specific about the fact that Siberia does not include the
Soviet Far East. But even that distinction produces macro-
regions that are often too cumbersome to analyze in any useful
way. To a great extent, the problems of regionalization and the
need to balance regional and local scales results from the
structure of Soviet statistics. Although seldom published in
this form, we are hungry for any data provided at the economic
region level. This has clearly been a case whereby the manner in
which Soviet statistics are published often determines the
structure of analysis. There is need for more precision.
One possibility is a new regionalization scheme, which is provided in the following section on geographical context. Another contribution is the accumulation of urban data into agglomerations, which is provided in the next section. Because data are still sorely lacking, each of these attempts is preliminary and incomplete. Yet, the era of glasnost' may provide some of the data to fill in the blanks.

Each of these issues is important in addressing Siberia's role and the process of urbanization that has occurred therein. The study attempts to be sensitive to these issues as it first provides the historical and geographical context and, later, as it examines urbanization since 1959. These issues become even more important as the process of restructuring begins to affect Siberian development in the 21st century.

Historical context

A solid historical foundation is essential to understanding contemporary processes (see, for example Aziatskaya Rossiya, 1974, Lyashchenko, 1949, Okladnikov and Shunkov, 1968, and Semyonov, 1963). In this manner, it is possible to identify continuity and change in the evolution and development of Siberia. Not only is the Siberian experience treated in isolation from global processes, contemporary Soviet themes are often treated as totally new and alienated from their tsarist past. This study stresses balance between continuity and change
when examining the evolution of the Siberian settlement system.

**Tsarist legacy: foundations for Soviet colonialism.** By the end of the tsarist period, it is possible to characterize the relationship between the Russian heartland and Siberia as a classic core-periphery relationship. Although the inclusion of Siberia into the Russian state was facilitated by the fact that it was contiguous, the basic nature of the relationship remained colonial. Many of the characteristics of this relationship had changed over three centuries, but the basic dependency between core and periphery remained firmly entrenched. Primary goods, most importantly agricultural products, furs, fish, and, to a lesser extent, minerals, provided the economic rationale for Russian interest in the region, as did access to the Pacific afforded by the recently-completed Trans-Siberian Railroad. At the same time, primitive methods of resource extraction and industrialization kept the eastern regions heavily dependent upon European Russia and foreign countries for manufactured goods (Lyashchenko, 1949, pp. 584-604).

For the most part, early 20th century Siberia, specifically West Siberia, served as an agricultural colony, which supplied grain and dairy products to Europe and East Siberia. Furs for European Russia and Europe still retained importance as a source of national wealth, as did certain metals, especially gold, silver, copper, coal, and others. Yet, lack of technology in
extraction and production limited the degree to which these mineral resources stimulated growth and added to the national wealth. Those enterprises that succeeded were generally financed with foreign capital, as in the case of gold production in regions around the Lena, Vitim, Zeya and Bureya rivers, or were under the direct control of the tsar, as in the case of the Altay and Nerchinsk gold and silver regions (Aziatskaya Rossiya, 1974, vol 1, pp. 388-439, and vol. 2, pp. 182-87).

Thus, on the eve of revolution, the economic geography of Siberia (Fig. 3) already held the seeds of growth for economic integration into the national economy. To that time, however, the infrastructure had not been provided to take advantage of its relatively-untapped wealth.

In addition to its value as a potential source of unlimited natural resources, Siberia played an important strategic role in Russia's growth. In this regard, access to China had always been a key factor in tsarist designs on the Orient. The construction of the Trans-Siberian Railroad in the late-nineteenth century re-enforced Russia's control of Siberia and strengthened its link to the Far East and the Pacific.

After selling off its claims to Russian America in 1867, the Russian Empire spent the latter part of the 19th century consolidating its holdings in the Amur region, taking advantage
of a decaying Manchu dynasty (see Seton-Watson, 1967, pp. 438-45, 579-97, 682-84). The extension of the Trans-Siberian across Manchuria gave clear warning of further designs in the region. These designs, and further Russian expansion, were put to an end with its defeat in the Russo-Japanese War (1904-05). Although this defeat probably hurried along the overthrow of the monarchy in Russia, it also served to consolidate and legitimize Russian claims in the Far East. As a result of the Treaty of Portsmouth, Russia maintained control of the Amur and Maritime regions and the northern half of Sakhalin island. Although forced to cede control of northern Manchuria, Liaodong peninsula, and southern Sakhalin, Russia's links to the furthest reaches of its colonial empire were now strengthened physically by rail and politically by treaty.

The Revolution and subsequent establishment of the Soviet Union did little to change the basic nature of this relationship. In many respects, the ministerial model of control and decision-making within the Soviet economy paralleled the tsarist system of centralized control. When one adds to the political-economic structure the adversities of Civil War, collectivization and World War, it is not surprising that many of the ideologically-bound goals for diversified Siberian development did not receive serious attention during the first four decades of Soviet rule.
Stalinist legacy: eastward and extensive growth strategies. 

The economic history of the Soviet Union has been defined by the decision of Stalin to pursue rapid industrialization in an attempt to modernize and "catch the West." Stalin made it clear that competition with the capitalist countries played no small role in that decision.

We have lagged fifty to a hundred years behind the leading countries. We must cover this distance in ten years. Either we do, or they crush us (as quoted in Hutchings, 1982, p. 48).

This approach has led to unequal development for different sectors of the economy; heavy industry and the military have benefitted at the expense of light and consumer industries. This strategy had specific implications for Siberian development.

For Siberia, rapid industrialization meant that an increasing importance was tied to energy and mineral resource extraction, heretofore underutilized. Now, the industrial resources of Siberia were used to stimulate industrial development in the European regions of the country. First, they supplemented European supplies; later they replaced them. The economic value of West Siberia was noted by Lenin immediately after the Revolution, and incorporated into the first five-year plan (FYP) in 1928-29, wherein the decision was made to develop metallurgy based on the supply of iron ore from the Urals and
Greater emphasis on eastern development was well underway by World War II, as witnessed by increased industrial production, the establishment of 33 new cities (between 1928 and 1941), and increased population. From 1938-40 alone, nearly 600,000 migrated to Siberia and the Far East (Alekseyev and Isupov, 1986, p. 50). The Nazi invasion of the Soviet Union in 1941, however, greatly increased the pace of Stalin's shifting of industrial production capacity eastward.

The Nazi occupation of the western regions of the Soviet Union forced a massive migration of factories and labor. From 1941 to 1942, nearly 1600 large-scale factories were completely evacuated from the west, as were millions of workers. Of these 244 were relocated in West Siberia and 87 were relocated in East Siberia (Dokuchayev and Kozybayev, 1987, p. 82). Additionally, over 2000 new factories were constructed in Siberia and Kazakhstan during the War (de Souza, 1989, p. 71). As a result, from 1940 to 1945, production of heavy industry almost tripled in West Siberia and increased by nearly 40 percent in East Siberia (Alekseyev and Isupov, 1986, p. 64).

An ancillary result of these policies was the stimulus they gave to urbanization in the region. The process of Siberian
migration during the War had several components. First, millions of Siberians left Siberia to fight in the War. Most of these were men from the countryside. To provide the necessary labor for the increased level of industrialization, large numbers of rural Siberians as well as large numbers of European urban dwellers migrated to Siberian cities. Although the total population of Siberia decreased by 1.5 million during the War, there was actually an increase in urban dwellers of nearly 700 thousand (Alekseyev and Isupov, 1986, p. 194). In fact, the migration of labor and industry during World War II played no small role in the urbanization of Siberia. This process accelerated trends already underway. In 1929, on the eve of rapid industrialization, only 14 percent of the population of Siberia lived in cities; this proportion had increased to 31 percent in 1939 just prior to the War. By 1945, at the end of the War, 43 percent of the population lived in cities (Isupov, 1987, pp. 35 and 39).

On the one hand, shifting industrial capacity eastward resulted in increased investment in Siberian development. Yet, the nature of the development reinforced Siberia's dependency on European Russia and hampered its ability to produce a multidimensional economic geography. The overall goal of these policies was not to benefit Siberia, but to replace and augment the nation's productive strength.
Although Stalin sought to create a self-sufficient Soviet economy, isolated from the capitalist world economy, it was, in fact, processes in the world economy that greatly influenced Soviet policies toward Siberia -- competition with the West, which stimulated "superindustrialization", and World War II, which accelerated the shift in industrial capacity eastward. By the end of World War II, Siberia's value economically and strategically had been clearly demonstrated, and its integration into the national economy a priority item.

The post-War period saw a dramatic, but short lived shift in priorities as the Soviet Union sought to reconstruct and recover from the devastation. This meant, of course, major investment in the western regions of the country, which had suffered incredible losses during the War. For the interim, Siberian development was put on hold.

Khrushchev and Brezhnev legacies: the Siberian mega projects. With few exceptions, the post-Stalin era proved to be no different. Although plans talked of regional equity and improvements in the levels of development in outlying regions, the actual character of investment into the region remained highly concentrated and localized, still emphasizing the importance of resource extraction, transportation links with the Pacific, and military security.
One aspect of Siberian development that evolved under Khrushchev and Brezhnev was the approval of mega projects -- gigantic economic ventures that required large allocations of capital resources, with questionable levels of return to the national economy. The first of these were the huge hydroelectric power projects begun the 1950s. Constructions of these projects lasted 30 years into the 1980s.

Major hydro power stations have been constructed, or are under construction, along the Angara River, at Bratsk, Ust'-Ilimsk and Boguchany; along the Yenisey, at Krasnoyarsk and Sayan-Shushenskoye; and, along the Zeya, Bureya, Vilyuy and Kolyma rivers in the Far East (USSR, 1985, pp. 50-51). Each has been responsible for the establishment of high-energy consumption production, particularly aluminum. Yet the overall economic rationale may be questioned:

It may well be that the whole policy of construction of gigantic Siberian hydroelectric power stations was a fantastically costly mistake, undertaken without adequate analysis and in ignorance of the energy crisis which the European USSR began to face from the mid-1950s onwards (Schiffer, 1989, p. 24).

Despite controversy within the Soviet Union over the advisability of hydroelectric projects in Siberia and the Far East, the decade of the 1970s saw further implementation of mega projects, particularly the Baykal-Amur Mainline (BAM) and Territorial-Production Complexes (TPC's). Although they marked a change in Soviet strategies, they were reminiscent of similar
tsarist mega projects. In fact, BAM is often referred to as the second Trans-Siberian.

The 1970s may be referred to as the decade of the mega projects. The epitome of these projects was the construction of the Baykal-Amur Mainline (BAM; Fig. 4) (see Shabad and Mote, 1977). Initially stretching from Ust’-Kut to Komsomol’sk, it stretched over 2000 miles and was planned to account for one percent of the total Soviet capital investment for the 1970s, over 40 percent of the total expenditures for Soviet railroads during the period 1976-80 (Shabad and Mote, 1977, pp. 66-67). By the time of its completion, it greatly exceeded planned costs. Additional lines linked Ust’Kut to the Trans-Siberian at Taishet, and in the east it was extended to reach the Pacific Ocean at Sovetskaya Gavan’. From Komsomol’sk a line joined it to the Trans-Siberian at Khabarovsk, and a feeder line (Little BAM) linked with Burkakit in southern Yakutiya.

The rationale for BAM was clearly in keeping with Siberia's role in the national economy. Economically, BAM was intended to open new resource regions for exploitation, for both domestic and foreign markets, and to provide better access to Pacific Asia. Strategically, BAM was intended to provide a more secure route for the movement of troops and equipment vis-a-vis China. Both economic and strategic considerations, thus, played important roles in implementing a mega project, which, like the hydro power
stations, was questionable with respect to economic efficiency.

The 1970s also saw the implementation, at least in theory, of Territorial Production Complexes (TPC's) (see: de Souza, 1989). Although not as "concrete" as hydro stations and rail lines, they represent another kind of approach to Siberian economic development, at least in commitment. It is not yet clear the extent to which they are rhetoric and/or reality.

According to Kolosovskiy, the father of the TPC concept, and as quoted in de Souza (1989, p. 89):

... a production complex is an economic (interconnected) combination of enterprises in a given industrial center or in an entire region that achieves a desired economic effect through proper (planned) selection of enterprises in accordance with the natural and economic conditions of the region and its economic-geographic and transport location.

This basic definition still holds true with minor additions. It is important to point out that "the complexes are formed to solve a national economic problem or, ultimately, make possible a future development of the national growth potential" (de Souza, 1989, p. 92). This definition could be applied to almost any economic region, with two exceptions -- they are comprehensively planned, and they are designed to fulfill national, as opposed to regional or local, needs.

For Siberia and the Far East, five TPC's have been
specifically identified: the West Siberian, Kansk-Achinsk, Sayan-Shushenskoye, Bratsk-Ust'-Ilimsk, and South Yakutian (de Souza, 1989). An additional eight have been planned for development along the BAM, all of which have apparently been put on hold. With the exception of the West Siberian TPC, all of these are based on the production of hydroelectric power for energy-intensive industry. In the Bratsk-Ust'-Ilimsk TPC, this power is used for the production of aluminum, timber products and iron ore; in the KATEP, for aluminum, metallurgy and machine building; in the Sayan-Shushenskoye TPC, for aluminum and transportation equipment, primarily for BAM; and in South Yakutiya, for coal, primarily for export to Japan. West Siberia, as one would expect, relies primarily on thermal power for the production of oil and gas products, of which it is the Soviet Union's leading producer.

These mega projects notwithstanding, basic approaches toward the exploitation and development of Siberia and the Far East remain constant. Hydro stations, BAM and TPC's are designed primarily to attain greater efficiency in the development of natural resources for use by the national economy. The "push" toward Siberia under Stalin as a result of superindustrialization and World War II, and the implementation of mega projects throughout the post-Stalin period, resulted from continuing competition with the West, the economic growth of various Pacific countries, coupled with depletion of resources in the western
regions of the country, and the need to secure the Soviet presence in Asia during the post-War period.

It is important, however, not to confuse these mega projects with a dramatic shift in national commitment to Siberian development. Jonathan Schiffer, in his detailed and insightful analysis of Soviet economic policy toward Siberia for the period, warns of the pitfalls of confusing rhetoric for reality. Statements of top government officials and inclusion in plan guidelines do not ensure implementation. In fact, for the post-Stalin period, he shows that Siberia's share in state cooperative investments remained relatively stable. Its share accounted for a high of 18 percent of total national capital investments during the War years (1941-45), and dropped to a low of 13.5 percent in the immediate post-War FYP (1946-50). Its share rebounded to 15.6 percent in the next FYP (1951-55), and remained at just over 16 percent from then until the mid-1970s (Schiffer, 1989, p. 29).
BASIC TRENDS IN SIBERIAN URBANIZATION
IN THE POST-STALIN ERA*

Now that the historical groundwork has been laid, it is possible to examine the process of urbanization in post-Stalin Siberia, roughly defined as the period from 1959 to 1985. This discussion builds upon preliminary findings, published by the author in 1987. This section is divided into three parts. The first part examines the geographical context for Siberian urbanization and presents a new regionalization scheme for the region. The second part discusses basic trends for the urban settlement system in Siberia from 1959 to 1985. The third part examines the evolution of the urban agglomeration, as both a reflection of past policies and a foundation for future development strategies.

Geographical context

The geographical context for Siberian development is

* Use of the term "post-Stalin era" instead of "since Stalin" represents a subtle, but important change of terminology. "Post-Stalin" refers to the period dominated by the structure and policies set by Stalin, which pervaded the Soviet political economy after his death. With the introduction of dramatic changes by Gorbachev in the mid-1980s, this period has finally been brought to a close, and a new period, beginning in 1985, currently referred to as the era of perestroyka, has replaced it. It is also appropriate to use 1985 as a date of closure until the results of the 1989 census are published, at which time 1989 will serve as the year of closure. A 15-volume census has been promised for the fall of 1990, which promises great things; but, only time will tell.
essential to understanding the nature of urbanization in the region. Siberia's enduring value to the European core is geographical, not surprising for a region that encompasses one-tenth of the earth. The pattern of development within Siberia is closely correlated with relative location. Proximity to natural resources, routes of transportation, and the Pacific Basin defines areas of concentrated growth in the region. As a result, Siberia's primary role continues to be as a resource periphery and a source of access to the Pacific Basin.

*Treasure trove of resources.* In value and importance, the "soft gold" of the Cossacks has been replaced by the "black gold" of the Commissars. Yet, the treasures of Siberia are diverse and dispersed, ranging from oil and gas in northern West Siberia to timber and fish in the southern Soviet Far East. For example, from the Kuzbas in the mid 1980s, the Soviet Union received 8 percent of its steel and 20 percent of its coal; from West Siberia, it received 65 percent of its oil and 57 percent of its natural gas; from Siberia and the Far East, 37 percent of its sawn materials; and, from West Siberia, 9 percent of its grain (Molodenkov, 1987, p. 6).

In this regard, it is useful to identify several (of numerous) Siberias, and to characterize briefly their value to the national economy (Fig. 5)*. In West Siberia, these include

* For Figures see page 73.
the Ob'-Irtysh and Kuznetsk-Altay regions; in East Siberia, the
Noril'sk, Bratsk-Ust'-Ilimsk, Kansk-Achinsk, Pribaykal'ye and
Zabaykal'ye regions; and, in the Far East, the northern Far East
and southern Far East regions. It is not by coincidence that
several of these have already been identified as TPC's within the
context of Soviet planning strategies.

In West Siberia, the Ob'-Irtysh region includes Tyumen',
Omsk and Tomsk oblasts. Key centers in the region include the
cities of Surgut, Nizhnevartovsk, and Urengoy. For the national
economy, this region is synonymous with the production of oil and
gas. It also produces additional petroleum products,
agricultural and fish products, and has some machine building,
primarily for local use.

In southern West Siberia, the Kuznetsk-Altay region includes
Altay Kray, and Kemerovo and Novosibirsk oblasts. Major
industrial cities of the region include Novosibirsk, Barnaul, and
Kemerovo. For the national economy, this region is a major
supplier of coal. It also produces iron-ore, aluminum,
machinery, foodstuffs and timber products.

In the far northern reaches of East Siberia, the region
around Noril'sk provides valuable ferrous and non-ferrous metals.
Of importance are nickel, cobalt, lead, zinc, and copper.
The Bratsk-Ust'-Ilimsk region includes an area north of Irkutsk. Based on hydropower from dams at Bratsk and Ust-Ilimsk, it produces timber products, iron ore, and aluminum for the national economy.

The Kansk-Achinsk (KATEP) region includes southern Krasnoyarsk Oblast. The key industrial city in the region is Krasnoyarsk. For the national economy, this region is a major supplier of coal, iron ore, timber products, and aluminum. It also produces machines, primarily for local use.

Pribaykal'ye is basically Irkutsk Oblast. It includes hydropower from the Angaro-Usol'ye node. Irkutsk is the dominant city of the region. For the national economy, this region contains important sources of molybdenum, mica, coal, and timber. It also produces machinery and aluminum.

Zabaykal'ye includes Chita and Buryat ASSR's to the southeast of Lake Baykal. Key cities in the region are Chita and Ulan-Ude. For the national economy, this region produces gold, timber products, and non-ferrous metals.

In the Far East, Yakutiya includes region around Yakutsk and southern Yakutiya, around Neryungri. For the national economy, it supplies coal, diamonds, and iron ore. It also produces agricultural products for local consumption.
In the northern Pacific Far East there are three, relatively isolated subregions: Magadan, Kamchatka and Sakhalin. Each is located near an important port facility: Magadan, Petropavlovsk-Kamchatskiy and Yuzhno-Sakhalinsk. For the national economy, Magadan is a major source of gold; Kamchatka supplies coal; and Sakhalin is beginning to develop its deposits of oil and gas. In addition, each provides access to the Pacific.

The final region includes most of the southern Pacific Far East, to include Khabarovsk and Maritime krays, and Amur Oblast. The major cities of the region are primarily ports -- Sovetskaya Gavan', Khabarovsk (inland port), Nakhodka, Vladivostok, as well as the region's major industrial center, Komsomol'sk-na-Amure. For the national economy, this region is a major supplier of fish, timber products, coal, and non-ferrous metals. It also produces machinery, especially those kinds associated with ship building and repair. In addition to the natural resources, these ports and entrepots provide greater access to the Pacific for both economic and military purposes.

Yet, this regionalization scheme does not suggest that Siberia and the Far East are fully integrated economic regions of the Soviet state. On the contrary, the Russian Revolution should not be seen as an absolute break with the past. There has been as much, if not more, continuity as there has been change. The basic nature of the relationship between the Russian core and the
Siberian periphery, despite the ideological rhetoric, has remained the same. What has changed, however, is the degree to which Siberia can still be referred to as a "frontier."

Clearly, there are regions within Siberia that can no longer be called frontiers; yet, the basic nature of the relationship defines Siberia as a colony of European Russia, USSR. In this regard, the term periphery seems more applicable, because it denotes a political-economic process, whereby Siberia experiences relatively "low incomes, primitive technology, and undiversified production." Thus, if it is misleading to refer to Siberia as a resource frontier, it may be more appropriate to refer to it as a resource periphery.

It is in this regard that we must balance local and regional impacts with national and global impacts on Siberian development. It is short-sighted to equate global effects solely to the proportion of foreign investment in the region, or to the proportion of Siberian production destined for foreign markets. Rather, it is necessary to realize that much of the domestic demand for Siberian products results from Soviet integration in the world economy, i.e., what appears to be domestic demands for development, in part or whole, may, in fact, be global. This is why the potential impacts of perestroika present such an interesting set of possible scenarios for the future course of Siberian development.
Access to Pacific Asia: the economic dimension. For centuries, tsars and commissars have had an appreciation for the benefits to be gained from integration into the world economy. Siberia has always played a key role in this integration. In the 16th century, Russia supplied furs to the capitals of Europe; later, silver and gold were important exports; these were replaced in importance in the 20th century by energy and industrial resources for world markets.

During the 1960s and 1970s, the complementary relationship between resource-rich, technologically-poor Siberia and resource-poor, technologically-rich Japan served as an example of the potential for direct interaction between the eastern regions of the Soviet Union and the developed and developing countries of the Pacific Rim. For a variety of reasons, Soviet-Japanese relations never lived up to their the potential. Within the context of new economic programs, this potential may become unlimited.

Currently, however, the nature of limited Soviet-Japanese trade provides only glimpses of the possibilities. Soviet imports from Japan are dominated by manufactured goods and high technology, especially machinery and equipment, rolled steel and pipes. Soviet exports to Japan are dominated by natural resources, especially timber, coal, petroleum and petroleum products. Yet, total Soviet-Japanese trade accounts for less
than three percent of the total Soviet trade turnover, and only
two percent of the total Japanese trade turnover (Vneshniye,

This scenario applies to Soviet trade relations with the
other capitalist countries of Pacific Asia as well. Total trade
with Malaysia, Thailand, Singapore, Indonesia and the Philippines
combined represents less than one percent of total Soviet trade
turnover (Vneshniye, 1988, pp. 9-14). This does not include
trade with South Korea, which approached $US 280 million in 1988
(Lho, 1989, p. 1162) and the possibility of trade with Taiwan,
with whom trade relations, according to Gorbachev's Vladivostok
speech, will now be possible. When we combine Soviet trade with
all capitalist countries of the Pacific Rim, to include Japan,
Canada, the United States, Australia and New Zealand, the total
still represents less than five percent of Soviet trade turnover
(Vneshniye, 1988, pp. 9-14). The bases for increased trade and
economic relations are set.

Access to Pacific Asia: the strategic dimension. The
distinction between the economic and strategic dimensions of
Soviet access to the Pacific is somewhat artificial. Because one
of the functions of the modern nation-state is to secure and
protect national economic interests throughout the world,
economic and strategic factors are closely interrelated. In
capitalist countries, this interrelatedness is referred to as the
military-industrial complex, implying interaction between the government and private companies, most importantly multinationals, in domestic and international affairs. In the Soviet case, where the state controls both components of the military-industrial complex, the distinctions are even more obscure. The primary rationale for a Soviet presence in Siberia and the Far East is economic. The military, as one means of enforcing government policy, is there basically to protect its economic interests — to defend borders, to secure transport routes into and out of the region, and to encourage and support friendly, or at least neutral, buffer states on its periphery.

The nature of the Soviet military presence in Siberia and the Far East changed dramatically during the Brezhnev years. The period immediately following the War and through the Khrushchev years saw Soviet strategic concerns directed primarily toward Eastern Europe and the West. Several events in the 1960s changed that. Of importance were the Sino-Soviet conflict and border clashes in the Far East, greater independence and the economic resurgence of Japan, and increasing American influence and involvement in the region. As a result, the strategic importance of the Soviet gateway to the Pacific received greater attention in Moscow, resulting in substantial increases in the Soviet military presence.

This increased military presence manifested itself in a
buildup of troops, ships and missiles. Soviet troops in the eastern regions (including Mongolia and Central Asia) increased from 10 to 52 divisions (one-fourth of all Soviet divisions), approaching half a million troops (Swearingen, 1987, p. 250). Of these, 41 divisions were stationed in Siberia and the Far East. The Pacific Fleet, which was practically non-existent until the 1960s, was built up to become the largest of the four Soviet fleets, accounting for approximately one-third of all Soviet warships. Port facilities along the coast were expanded to handle the increases. One-fourth of the Soviet Air Force was deployed to the Far East. And, finally, 170 SS-20 missile launchers were deployed. These complemented the ICBM's and MRBM's already in the region (Swaringen, 1987, p. 251).

The expansion of military preparedness in the region required investments from the military budget to handle the increased presence. These investments benefit economic as well as strategic functions. Most notable were the port facilities, especially Nakhodka, Vostochnyy, Vladivostok, Sovetskaya-Gavan', Anadyr and Petropavlovsk-Kamchatskiy, all of which, in addition to being naval ports, are also important commercial ports. Expanded facilities not only enabled the Far East to support a greatly-increased naval presence, but also to expand its commercial capabilities as well.

Clearly, Soviet policy over the last 30 years has been
intended to secure its claims on these eastern territories, not only as part of the Soviet state, but also as a region of access to the Pacific. A message has been sent that the Soviet Union is, in fact, a Pacific power. This is not to suggest that all Pacific issues have been settled simply by show of military force. Disputes still persist with China over the Amur region, and with Japan over the Kurile islands. It does suggest, however, that the Soviet state is willing to protect its interests in the region and to secure Siberia and the Far East as a periphery of the USSR.

Siberian urbanization, 1959-1985*

The highly-centralized decision-making process, and the national economic policies it has set, has produced a highly-urbanized, highly-concentrated, resource-oriented pattern of human activities. This pattern, as we have seen, is based primarily on resource extraction and transportation -- river and ocean ports and along rail lines. Nowhere is this more apparent than in the settlement system, which continues to serve as the lifeline for Siberian development.

By 1985, Siberia and the Far East were the most highly-urbanized regions of the country, with over 70 percent of the

population living in cities or urban-type settlements.* Of the 208 cities of the Siberian and Far Eastern settlement system, Novosibirsk and Omsk had populations in excess of one million; seven more -- Barnaul, Kemerovo, Novokuznetsk, Krasnoyarsk, Irkutsk, Khabarovsk and Vladivostok -- had populations over half a million; and, 29 cities had populations between 100,000 and 500,000.

From 1959 to 1985, relative growth for Siberia paralleled growth for the country as a whole -- 35 to 32 percent for overall population increases, and 78 to 80 percent for urban increases, respectively. This healthy relative growth for Siberia accounted for an increase in urban population of 7.9 million. This compares to an urban increase in European Russia of 32.5 million. By 1985, over 70 percent of all Siberians (22 of 30 million) lived in urban places.

At the interregional level, the growth in Pacific Siberia, the term used to describe the eastward-oriented regions of East Siberia and the Far East, compared favorably with European-oriented West Siberia. In both cases, the greatest growth occurred after 1970. The larger proportion in Pacific Siberia can be related to the emphasis on the BAM zone, Pacific ports, and increased interaction with Japan and the Pacific Basin,

* The data for the following analyses is provided in Appendices 1 and 2, which provide citations of the sources.
conditions which have since diminished in importance. The increase in West Siberia can be related to resource extraction, primarily oil and gas.

Several high growth regions emerged in Siberia. Two regions added over one million urbanites between 1959 and 1985: Tyumen' Oblast in West Siberia and Krasnoyarsk Oblast in East Siberia, where Irkutsk Oblast was close with an urban increase of 961 thousand. Although no administrative region of the Far East increased by one million, Primorskiy Kray showed a very healthy absolute increase of 736 thousand. The Far East had particularly high growth in the period 1970-85, especially 1970-75, because of increased Japanese relations. East Siberia also showed a very high relative increase for 1959-70 and during the early 1970s because of coal mining and development of the Bratsk industrial complex.

Tyumen' Oblast also had the largest relative growth as well, with an increase of 429 percent. Several other Siberian regions also showed high relative increases in urban population. Omsk in West Siberia was the next largest with a relative increase of 90 percent. Five others had relative increases of more than 100 percent, i.e., they doubled their populations during the period 1959-85. These were Buryat and Tuva ASSR's in East Siberia, and in the Far East, the Yakut ASSR and Magadan and Kamchatka oblasts. Only two Siberian regions had urban increases of less
than 50 percent. Kemerovo Oblast in West Siberian and Sakhalin Oblast in the Far East both suffered from the adverse effects of a stagnant coal industry.

The above administrative regions led the way in the increase in urban growth in Siberia. The urban population showed impressive gains in its share of the total population. By 1985, Tuva ASSR in East Siberia was the only oblast-level region with less than half its population (45 percent) living in cities. In only one other region, Altay Kray (55 percent urban), is the population less than 60 percent urban.

Except for the Buryat ASSR and Chita and Tyumen' oblasts, all administrative regions of West and East Siberia showed higher rates of growth for before 1970 than after. Regions of the Far East were more varied. The trend toward slower growth rates after 1970 reflects an overall slowdown in population growth for the USSR as a whole after 1970.

Figures 6 and 7 illustrate the basic structure of the Siberian settlement system for the years 1959 and 1985. For individual cities, between 1959 and 1985, 21 cities increased their populations by 100 thousand or more. These 21 cities accounted for an increase in urban population of 5.4 million, or 56 percent of the total urban increase for Siberia.
Fifteen multi-functional, administrative centers dominated the list: Novosibirsk, Omsk, Barnaul, Kemerovo, Tomsk and Tyumen' in West Siberia; Krasnoyarsk, Irkutsk, Chita and Ulan-Ude in East Siberia; and Vladivostok, Khabarovsk, Petropavlovsk-Kamčatskiy, Blagoveshchensk and Yakutsk in the Far East, are all capitals of their respective ASSR, oblast or kray. Only three Siberian capitals did not increase their populations by 100,000. These were Kyzyl (Tuva ASSR), Magadan (Magadan Oblast), and Yuzhno-Sakhalinsk (Sakhalin Oblast). Both Magadan and Yuzhno-Sakhalinsk had healthy increases of 80 and 72 thousand respectively. Kyzyl, although increasing in population by only 41 thousand, had a relative increase of 120 percent. Its low absolute growth reflects its small initial population rather than urban stagnation.

These fifteen high-growth administrative centers are representative of Siberian growth poles. According to Gokhman, their predominant development has led to "monocentrism" in the evolution of the Siberian urban settlement system. It is in these centers that service establishments, higher-educational and research institutes, and government and economic institutions have been concentrated, adding to their attractiveness for future investment and development (Gokhman, p. 262). The six remaining cities that increased by more than 100,000 developed around mining and industrial enterprises, more characteristic of the "company town" approach to development. In West Siberia, the
oil centers of Tyumen', Surgut and Nizhnevartovsk fit in this category, as does the coal mining center of Novokuznetsk. The two industrial centers of Bratsk and Angarsk in East Siberia owe their growth to the development of hydroelectric power.

High growth cities in the Far East are closely related to the continuing Russian and Soviet objective to find outlets to the sea (Dergachev, 1986, pp. 143-57). These cities include the port cities of Vladivostok and Petrapavlovsk-Kamchatskiy, as well as the inland entrepots of Khabarovsk, Komsomol'sk, Blagoveshchensk, and Yakutsk, which is the gateway to the resource potential of Yakutiya. The growth of these cities is greatly dependent on Soviet interaction with countries of the Pacific Basin, although this interaction affects cities throughout all Siberia.

Several Siberian cities have benefited from the introduction of Japanese technology since 1959 (Mathieson, 1998, pp. 491-500). Barnaul, Kemerovo, Tomsk and Tyumen' in West Siberia, received new industrial complexes from joint Soviet-Japanese ventures. Krasnoyarsk, Angarsk and Bratsk in East Siberia, and Khabarovsk and Komsomol'sk in the Far East also benefited from joint industrial projects. This technology transfer may help explain why Kemerovo, with its new petro-chemical industry was one of the few traditionally coal-dependent cities that grew rapidly. In other cases, however, industry seemed to be attracted to places
that had already reached a positive agglomeration of economies and so were the result of a previous population and industrial concentration rather than its cause.

The largest Siberian cities followed the same general trend in average annual growth rate as urban growth in the Soviet Union in general. For both West and East Siberia growth rates were greater before 1970 with the exception of Nizhnevartovsk, a post-1970 new town. Large cities in the Far East exhibited more variation in their growth rates. Yet, overall rates of growth for large Siberian cities dropped after 1970.

Increasingly, the growth of Siberia has been concentrated not just in cities, but in larger cities, a pattern that is in keeping with urban trends for the USSR as a whole. In Siberia, the number of large cities, those with populations of at least 100,000, increased from 24 to 37, their population from 5.8 to 12.4 million, and their share of the total urban population of Siberia from 47 to 57 percent. These data underscore the increasing concentration of Siberian urban dwellers in large cities. The 66 cities with 1985 populations over 50 thousand accounted for an increase of 8.0 million, or 82 percent of the total urban increase. This is from a total of 872 urban settlements -- 208 cities and 664 urban-type settlements.

Thus, the evolution of the urban settlement system in
Siberia is geographically restricted and highly concentrated, which is also characteristic for the Soviet Union as a whole, although not quite to this extreme. Clearly, the skeleton for further growth and development of the urban network in Siberia is concentrated in large urban centers located in potential growth areas.

The highly concentrated, localized nature of development has resulted in a lack of government investment in infrastructure, which has produced substandard living conditions. This has made it difficult to retain labor in the region. There have been various schemes to entice laborers, but they many times entail benefits to be obtained back in the western regions of the country. Soviet sociologists, themselves, have pointed out that the factor considered most important by Siberians deciding to return to the west is inadequate housing (Zaslavskaya et al., 1989).

This is, however, not to say that many are not staying; many are. By the time of Gorbachev's ascension to power, there were nearly 28 million people in Siberia, of which over nearly 20 million (71 percent) lived in Siberian cities (Nar khoz, 1984, pp. 14-16). In addition to building an increasingly large urban society in Siberia, these trends have also helped to solidify Russian control of the region. From the very beginning there was a great deal of cultural assimilation between indigenous peoples
and the Russian overlords. This has continued to the present. Today, ethnic Russians dominate the population of Siberia, especially in the cities. Currently, ethnic Russians alone comprise nearly 85 percent of the population (Ekonomicheskaya, 1989, pp. 115, 127 and 136).

Yet, the restricted and concentrated nature of urban growth, dominated by ethnic Russians, is not singular to the Soviet period. One characteristic has been evident throughout the conquest and consolidation of Siberia into the Russian and Soviet states -- the importance of cities as the key conduits for exploitation and development. From the initial ostrogi founded by the Cossacks grew the towns and cities of tsarist Siberia and the major urban centers of Soviet Siberia. It is striking that of the twenty-one Siberian cities with populations of more than 100,000, fourteen, or two-thirds, were founded prior to the Revolution. Their geographical and historical advantages have endured to the present. In fact, the urban network established during the early centuries of tsarist rule has provided the base for Siberian development during the Soviet period. And many of these pre-Soviet cities serve as centers for agglomerations.

Urban agglomerations in Siberia

It is essential at the outset to clearly define exactly what is meant by the term "urban agglomeration" in the Siberian context. It does not carry with it all of the functional
implications we associate with urban agglomerations in the Western context. This is primarily due to a lack of data about political, economic and social interaction. Yet, this study suggests that the urban agglomeration serves as a useful statistical artifact, providing the closest construct, theoretically, to a MSA, and carries with it certain connotations about development for the region. If, as this study suggests, future growth will continue to be highly concentrated and restricted, it will be concentrated for the most part in urban agglomerations, areas with the most highly-developed infrastructures in Siberia.

One weakness of most demographic studies of the Soviet Union stems from the use of urban population data as provided by the Soviets, i.e., only for the administrative city. There is no parallel to a functional city, such as an MSA in the United States. As a result, analyses of urbanization trends in the Soviet Union, by Soviet and Western scholars alike, are based on individual cities, thus, in some cases, misrepresenting the level of urban concentration that is taking place. Although incomplete to the present, the structure for accumulating data for urban agglomerations, as provided in this study for Siberia, is a positive step in the right direction.

For the purposes of this study, an urban agglomeration is simply a demographic entity, based solely on population. There
is some variation by Soviet scholars on the exact parameters, but agreement on the basic components is widespread (see Lappo, 1978, and Pertsik, 1980). For this study, the population levels are not as important as the fact that they indicate a certain degree of concentration. For an entire region, like Siberia, with a total population of 30 million, and an urban population of just 22 million, a city of 100,000 represents a significant level of concentration. In all, only 37 Siberian cities had populations in excess of 100,000 in 1985.

Thus, this study defines the core of the urban agglomeration as a central city of at least 100,000. For a threshold, the urban agglomeration includes all urban settlements within 120 kilometers from the central city. Where two or three cities of 100,000 are within 120 kilometers of each other, we include all urban settlements within 120 kilometers of any of the central cities.

For simplification, the number of multiple-core agglomerations was kept to a minimum. In fact, Novokuznetsk-Kemerovo remains the only multiple-core agglomeration in the study. In all other cases, a single, dominant core emerged and other cities of 100,000 were considered as satellite cities within the agglomeration. For example, the Krasnoyarsk urban agglomeration includes two cities, Kansk and Achinsk, with populations in excess of 100,000. Yet, Krasnoyarsk is clearly
the central city with a population of 872,000. In such cases, the threshold extends 120 kilometers from all three of these cities.

Unfortunately for purposes of this project, most of the cities, not to mention urban-type settlements, have populations of less than 50,000 and, thus, data are not published for them. This includes 87 of the 112 cities within the urban agglomerations. Yet, this does not diminish the utility of the urban agglomeration because the greatest proportion of the urban population resides in cities of over 50,000. Thus, basic trends for the larger cities of the region are not only reflective of trends for cities as a whole, but are understatements of these trends.

Based on this definition, this study identifies 24 urban agglomerations in Siberia (Fig. 8): nine in West Siberia, seven in East Siberia, and seven in the Soviet Far East. For several, data are available only for the central city. These include Omsk, Tyumen', Nizhnevartovsk, Chita, Ulan-Ude, Noril'sk, Khabarovsk, Yakutsk, Magadan, Petropavlovsk-Kamchatskiy and Yuzhno-Sakhalinsk. Although a number of these are probably only demographic agglomerations, their inclusion is a reflection of population concentration, which in turn, is a reflection of their past importance and future potential for the development of the region.
It should not be surprising that it is possible, and useful, to discuss the 24 Siberian urban agglomerations within the regionalization scheme previously presented in this section. Thus, in the Ob'-Irtysh region, we find the Tyumen', Omsk, Tomsk, Surgut and Nizhnevartovsk urban agglomerations. In the Kuznetsk-Altay region, we find the Novosibirsk, Barnaul and Novokuznetsk-Kemerovo agglomerations. The Noril'sk region includes the agglomeration of the same name, while Bratsk-Ust'-Ilimsk includes Bratsk. The Kansk-Achinsk region is dominated by the Krasnoyarsk agglomeration. The Pribaykal'ye is dominated by the Irkutsk agglomeration, while Zabaykal'ye includes the Chita and Ulan-Ude agglomerations, and Yakutiya is dominated by Yakutsk. The northern Pacific Far East region finds three isolated agglomerations: Magadan, Petropavlovsk-Kamchatskiy and Yuzhno-Sakhalinsk. The southern Pacific Far East region includes four: Vladivostok, Khabarovsk, Komsomol'sk-na-Amure and Blagoveshchensk. Only the Rubtsovsk and Abakan agglomerations do not fit into any of the regions, although a stretch of one's geographical imagination allows us to tie both Rubtsovsk and Abakan to the Kuznetsk-Altay region.

Because 1985 data are available only for cities of 50,000, the primary analysis includes the 66 Siberian cities for which data are published, as representative of Siberian cities as a whole. In fact, although they represent only 32 percent of Siberia's 208 cities, they account for 66 percent of the urban...
The relative paucity of new cities is indicative of trends for the Soviet Union as a whole. For the most part, dominant cities are pre-Soviet, benefitting from an historical advantage. Fourteen of the 25 central cities are tsarist in origin. Many of the dominant Soviet-period cities were built during the Stalin period, especially in the 1930s. Of the eleven new Soviet cities that are currently central cities of Siberian agglomerations, six were founded during the 1930s or before.

The growth of the 24 Siberian urban agglomerations in the post-Stalin era parallels growth trends, as previously discussed, for urban Siberia as a whole. This is not surprising given that 52 of Siberia's 66 cities with populations of at least 50,000, including all cities of 100,000, are within urban agglomerations. These 52 cities account for 62 percent of the total urban population of Siberia's 208 cities and 684 urban-type settlements.
In fact, growth rates for the urban agglomerations slightly exceeded growth rates for Siberia as a whole and the national average as well. For the 52 agglomeration cities, there was a total increase in population of 6.2 million (83 percent), compared to regional and national increases of 78 and 80 percent respectively. Growth rates varied between regions — the further west, the higher the absolute growth; the further east, the higher the relative growth. The West Siberian agglomerations increased their populations by nearly three million, or 72 percent; while East Siberian agglomerations increased by 1.8 million, or 94 percent; and the Far East agglomerations added 1.5 million, which nearly doubled its urban population. Overall, we detect healthy growth for the agglomerations in both absolute and relative terms.

Although specific numbers are not available, it is possible to identify three major sources for this growth. The first contributor is the inter-regional migration of labor from the European regions of the country, either as a result of debts owed society, for education for example, or as a result of incentives. These tend to be short-term migrants; however, a proportion remain in Siberia permanently (see discussion above, and Zaslavskaya, 1989). A second contributor is rural to urban migration, which tends to be attracted by increasing numbers of semi-skilled and unskilled jobs as the urban infrastructure diversifies. A third contributor is the migration of people from
smaller urban to larger urban places. Again, data are lacking; yet, there are some indications of this trend in the data available for the Siberian agglomerations. When we divide the urban agglomerations into central cities and satellite cities, several interesting trends are revealed in this respect.

All 25 central cities showed healthy positive growth between 1959 and 1985. Together they showed an increase in population of just over 5.2 million (5.5 to 10.7 million), or 95 percent, which is substantially higher than the relative urban increase for Siberia (78 percent) or the Soviet Union as a whole (80 percent). These 25 central cities alone accounted for 54 percent of the total increase in urban population for Siberia between 1959 and 1985.

Novosibirsk, Omsk and Krasnoyarsk together accounted for an increase of 1.5 million, or 15 percent of Siberia's urban growth. Seventeen of the remaining 22 central cities had increases of over 100 thousand. The central cities of those agglomerations associated most closely with energy resource extraction, transportation links and access to the Pacific Basin fared quite well during this period.

There was much greater diversity for the 27 satellite cities for which we have data for both years. Total growth for these cities was 958 thousand (1,995 to 2,953), an increase of 48
percent, which further supports the contention that most of the growth was concentrated in the central cities. Of these 27 cities, five actually showed decreases in population. These included Prokopev'sk, Kiselevsk and Osinniki, Anzhero-Sudzhensk and Cheremkhovo. In addition, there were 10 satellite cities with populations in the upper 20s to mid-30s in 1959 that had not reached 50,000 by 1985.

What we are witnessing is exactly the opposite of the phenomenon experienced by US metropolitan areas in the 1970s and 1980s, now referred to as suburbanization. Metropolitan areas experienced healthy growth at the same time that central cities were declining in population. In the Soviet Union in general, and Siberia in particular, the growth of the central cities was the prime contributor to the growth of the agglomerations. Limited supplies of goods and services, better housing and other amenities continue to produce a situation in which large urban centers are the most attractive alternatives for a large proportion of the Soviet populace. One of the key challenges facing economic restructuring is the difficulties of distributing goods and services more equally throughout the settlement system to relieve the pressure on the largest cities and to make the satellite cities an attractive alternative to "life in the big city."

These data suggest that investment priorities from European
Russia and growth trends for Siberia during the past three decades have followed the precedent set in tsarist times, namely, highly selective in approach. They also suggest that the rationale for this strategy is closely tied to Siberia's role as a resource periphery and region of access to the Pacific, and that the framework for this strategy continues to be the major urban centers of the settlement system, the central cities of the urban agglomerations. The basic relationship continues to be core-periphery and the growth of the urban agglomerations reflects the nature of this relationship as well as promotes it. These data also highlight where we should look to understand future developments in the region. As yet underdeveloped, the settlement system does provide the structure for future development whatever form it may take. The first indications of change, if there are to be any, will come from the urban settlement system and these 24 urban agglomerations.
Any discussion of the political economy of the Soviet Union today must examine the potential impact of economic restructuring -- perestroika. Although many of the particulars have not yet been spelled out, "elements of the reforms can be pieced together" (see Gill, 1987, pp. 19-37). Economic restructuring ala Gorbachev seeks to do nothing less than radically reform the entire Soviet economy. As embodied in the directives of the 12th FYP (1986-90) and numerous pieces of legislation (see Schroeder, 1989), perestroika might be referred to as the "third great economic reform in all Soviet history," an appellation originally given, and subsequently withdrawn from, the Brezhnev reforms of 1965 (Schroeder, 1989, p. 305). Only time will tell if this characterization will hold.

Much has been written about perestroika, that need not be repeated here. For the purposes of this project, several of its components have implications for the future course of Siberian development ("Guidelines"). The key for economic development in the immediate future is modernization of existing facilities as opposed to construction of new ones. Of greatest importance will be improvements in the machine-building sector of the economy. Decentralization of decision making and greater local autonomy is another change in direction. Imports are identified as a tool
for stimulating modernization and economic growth. And special emphasis is given the upgrading of the fuel and energy complex and agricultural sectors of the economy. This, and much more, is all to be accomplished within the framework of a "socialist regulated market economy" (Schroeder, 1989, p. 316).

For Siberia, the impact of perestroyka, which emphasizes intensification and efficiency, promises to have spatial ramifications (see Bond, 1987). Economic restructuring does not necessarily represent a "turning away" from Siberia and the Far East in favor of increased investment in the European regions of the country, as some have suggested (see Bond, 1987, and Shabad, 1989). Apparently, grandiose schemes for development, in the tradition of the mega projects of the 1970s, will be missing. For the time being, further development of TPC's along the BAM and water diversion schemes, for example, have been put on hold. It is not clear, however, that perestroyka will change the basic nature of the Siberia's role in the national economy as the Soviet Union approaches the 21st century.

The first question that needs to be answered is whether the policies and changes embodied in perestroyka are going to be implemented; and if so, when, and in what form. The entire discussion of the impacts of restructuring on resource development in Siberia is predicated on the assumption that Gorbachev will succeed and that he will be able to dramatically
reform the entire Soviet economy. More likely, changes in the economy will be the result of compromise -- major changes, but not to the extent currently envisioned by Gorbachev and the architects of *perestroyka*. Even the architects themselves are not quite sure where this is leading:

So now we have something new: the *perestroyka* of 1985. Why should we think that this one will be irreversible, that the changes will be long-term, that this reform will not share the fate of all the preceding ones? This is a very serious question: we might even say that it is the absolute crux of the matter... It is the question we must answer (Aganbegyan, 1989, p. 110).

Yet, given the momentum for change produced by Gorbachev's first five years in power, some kind of change is inevitable. The Soviet economy is embarking on a path toward reform -- to some, change is proceeding too slowly; to others, too rapidly. Whatever changes occur will affect Siberia and the Far East, producing both continuity and change in the basic nature of the relationship between the periphery and the European core.

**Siberia's role in *perestroyka***

Our short and long-term plans are linked, to a considerable degree, with the tapping of the natural wealth of Siberia and the Soviet Far East ("Strategic course," p. 107).

In a series of speeches in 1986, one to the 27th Party Congress ("Strategic course," 1987), and two while on a visit to the Far East ("Text," 1987, and "Major overhaul," 1987), Gorbachev made it clear that Siberia's role in the Soviet economy
would continue to be primarily the role of a resource periphery to the European Russian core. In this respect, its role continues to be three-fold. First, Siberia will be a supplier of certain resources to domestic markets to help stimulate the economic development of western regions of the country. Second, it will be a supplier of resources to foreign markets to earn hard currency, gain technology, and promote the integration of the Soviet Union into the world economy. Third, and closely related to the latter, Siberia and the Far East will continue to provide the Soviet state with access to Pacific Asia.

The primary role of Siberia and the Far East is to provide the national economy with natural resources. In this role, it is interesting to note that the recent *Ekonomicheskaya geografiya SSSR* provides a regionalization scheme based first and foremost on the contribution of the region to the "all-union division of labor." For domestic markets, West Siberia will continue to be a major supplier of oil and gas, coal and iron ore. Modernizing the "fuel and energy complex" is a major goal of the 12th FYP, and Urengoy oil and gas, and Kuzbas coal are specifically mentioned ("Guidelines," pp. 170, 177). East Siberia will continue to be a major supplier of metals, primarily nickel, cobalt, lead, zinc and copper, in addition to aluminum and coal. The Far East will continue to provide domestic markets with fish, timber and precious metals, especially gold, silver and diamonds.
In addition to supplying domestic markets, Siberian resources will help the national economy accrue the hard currency needed to trade in the world economy. In the immediate future, integration in the world economy becomes even more important under perestroika. Foreign Minister Shevardnadze has made it clear that integration into the world economy is a necessary component of restructuring:

'In reality,' he [Shevardnadze] has said, 'the division into socialist and capitalist systems of economics, with all the extremely perceptible limitations for us, in no way signifies the absence of mutual penetration. We were drawn into the world economic process long ago... We should be part of the world economic system and we can and are obliged to become so...' (as quoted in Aganbegyan and Timofeyev, 1988).

This attitude is in keeping with the 12th FYP Guidelines, wherein the Soviet "... import policy is called upon to actually help accelerate scientific and technological progress" ("Guidelines," p. 192), ie., to help obtain manufactured goods, technology and hard currency. In exchange, the Soviet Union has natural resources to offer hard-currency countries. A large proportion of these resources are produced in Siberia and the Far East. Several of these resources already dominate Soviet exports abroad. Currently, petroleum and petroleum products account for 29.4 percent of all Soviet exports; natural gas for 8.8 percent; ferrous metals for 4.5 percent; and, timber products for 3.6 percent. These four categories alone comprise almost half of all exports from the Soviet Union (Vneshniye, 1989, pp. 20-31). These are, of course, the very categories of resources Siberia
supplies domestic markets. It appears, then, that Siberia will also continue to play a role in Soviet attempts to use foreign trade as a stimulus for perestroika.

Not only is Siberia a region that will provide exports for trade, it also provides direct access to Pacific Asia, a region that may become a major supplier of imports to assist "scientific and technological progress":

Given the dynamics of the international economy, the Soviet Union's position in relation to the countries of the Asia-Pacific region may be the most promising source of stimulus for change (Matuszewski, 1989, p. 6).

The economic potential of relations between Siberia and the countries of the Pacific Rim, which has been an important consideration in Russian and Soviet foreign policy for centuries, could take on even greater significance as a result of perestroika. Gorbachev himself has clearly indicated the importance of the Asia-Pacific region to his proposals for economic change. The real significance of his 1986 Vladivostok speech, some have suggested, concerned:

... his expressed fears about maintaining Soviet economic competitiveness, his perception of the commercial and technological dynamism of the Asia-Pacific region, and his clearly articulated intention to expand Soviet trade and access to advanced technology in order to stimulate innovation in the sluggish Soviet economy (Matuszewski, 1989, p. 10).

Yet, increased Soviet involvement carries with it strategic as well as economic ramifications. It is important to remember
that the two are interrelated. The Soviets have identified that world peace is necessary in order to accomplish the goals of perestroika. This is particularly applicable to the Pacific realm, where "... the Soviet Union's identity as an Asian-Pacific power is critical to Gorbachev's twin concerns of security of the USSR and the rejuvenation of its economy" (Thakur and Thayer, 1987, p. 2).

Soviet policies directed at Pacific Asia are threefold (Samoteikin, 1987, p. 12). First, Gorbachev has called for increased bilateral relations with all countries of the Pacific Basin. Second, he identifies the need to settle regional disputes to insure peace and security, specifically conflicts in Afghanistan, Korea, and Kampuchea. And, he proposes to scale down Soviet military presence in the Far East. The implementation of these policies would allow the Soviet leadership to secure its eastern frontier, to free up resources from the military, and to gain access to the capital and technology of the region, all of which would greatly facilitate economic growth and development.

In this regard, Siberia stands ready to continue in its role as provider of resources for international trade, particularly with the countries of the Asia-Pacific region, and as the bridge between the Soviet Union and East Asia. Yet, within this context of continuity we may be able to discern possible changes in the
nature of the relationship.

Potential impact of perestroyka on Siberia

It is not difficult to figure out Siberia's role, as perceived and planned from the core, in the Soviet economy into the 21st century. It is far more difficult to predict, in return, what kinds of effects perestroyka will have on the development of Siberia. To a great extent, uncertainty about the future course of Siberian development results from the fact that no one knows which policies of the overall program will actually be implemented. As a result, one can posit a number of alternative scenarios.

The most obvious, and most cynical, prediction is that perestroyka will have little effect on the basic nature of Siberia's relationship with the core. Certainly, recent policy statements and guidelines suggest that the core perceives the relationship the same way it has for decades. The actual contributions of the region may change, and certain sectors of the Siberian economy and particular areas within the region may benefit. But, these sectors and areas are those that have historically received most attention from Europe. In addition, there is widespread belief that the enthusiasm of Pacific Rim countries, especially Japan, for developing Siberian resources has waned and will not increase in the near future (Dienes, Schiffer, and others). Development will, as a result, continue
to be limited, concentrated and highly dependent on the core, based primarily on the exploitation of natural resources and transportation linkages.

If some, or all, of Gorbachev's policies are eventually implemented, the scenario could be quite different; not that the perception of Siberia's role will change. Rather, several of the policies embodied in perestroika may help to stimulate a more comprehensive development. One can only imagine the effects of greatly increasing local autonomy in economic decision making, or allowing true competition between enterprises, based on a relatively free-market system, or individual or cooperative leasing of land. In addition to their impact on domestic affairs, these kinds of innovation in the Soviet economy could also act as stimuli to increasing the level of joint ventures with foreign corporations through free economic zones for foreign trade. Under some or all of these conditions, Siberia's development takes a very different course. We might actually envision a situation wherein the rhetoric stays the same, but the reality changes.

Regionally, the future impacts of perestroika would first effect the Far East and West Siberia, primarily because they have the best-developed infrastructure and the necessary kinds of resources, both natural and locational. Here again, these would probably be in the southern reaches of the regions. East Siberia
would lag behind, but not to be forgotten.

The kinds of goods exploited would remain the same; the perception of Siberia's role, from the point of view of the core, would remain the same. What would change would be the economic effects of their exploitation. In other words, under a situation of competition and free-market trading, a much greater proportion of the surplus value would remain locally. Basic industries would actually be used to build a surplus in the region, which could then be used to invest in infrastructure and other kinds of consumer-oriented activities. Three levels of economic interaction can be identified (see Gill, 1987, p. 39).

At the national/international level, several products are attractive to domestic and foreign markets; these would be the basic industries, designed to produce wealth. Of primary importance are the fuel and energy resources, especially petroleum and natural gas from West Siberia, and coal from East Siberia. Furs still play a role, as do precious metals. Ferrous and non-ferrous metals could be used to stimulate the economies of East Siberia and northern Far East. And, the Soviet Far East will continue to be major exporter of timber, fish and fish products.

In addition to stimulating the development and modernization of these industries themselves, income derived from the sale of
these resources could be used to stimulate the growth of other sectors of the economy, those which are primarily regional and local. These are the kinds of activities that must be upgraded if Siberia is to develop comprehensively in the 21st century. They include machine building, the construction industry, light industry, the consumer industry, and agriculture. To become self-sufficient in some of these sectors, and less reliant in others would truly help stimulate economic development in the regions. Siberia would be using its traditional role as treasure trove of resources and area of access to the Pacific to finance its new role as a comprehensively-developed economic region.

For the urban settlement system, the initial impact of these reforms would benefit the major urban centers along the southern tier and the resource centers of West Siberia. Specifically, in the Far East, the urban agglomerations at Vladivostok, with its port facilities, and at Komsomol'sk, with its industrial base, stand to benefit the most. In West Siberia, all urban agglomerations in the Ob'-Irtysh and Kuznetsk-Altay regions will benefit as a result of their natural resource bases. Major industrial centers in the region, especially Novosibirsk, Barnaul and Kemerovo, may benefit the most. In East Siberia, the urban agglomerations at Irkutsk and Krasnoyarsk, primarily as a result of resources, industrial infrastructure and transport links, would be the immediate beneficiaries of economic reform. In the long term, not only would these urban agglomerations grow and
diversify, but increased economic incentives and the accumulation of local surplus would help the remaining agglomerations become increasingly important parts of the regional picture.

Recent events in the Soviet Union have revealed the possibility, still remote, of yet another alternative scenario for Siberia's future. This scenario will result from what we might refer to as the "Yeltsin factor." In fact, the Yeltsin factor suggests a couple of possible scenarios -- one within the framework of a reformed RSFSR, and one outside that framework, ie., as a separate and independent Siberian, or Far Eastern, republic.

The Yeltsin factor refers to the proposed 500-day reform program of Boris Yeltsin, president of the Russian Republic (RSFSR). These reforms, voted in by the parliament of the RSFSR, call for the introduction of a market economy in the Russian Republic, and a greater degree of independence from the Soviet government on political and economic matters. Gorbachev has recently agreed to allow the RSFSR to proceed in this direction, which many see as simply an extension of Gorbachev's perestroika. Although Gorbachev has been blocked by conservatives from implementing the most radical policies of perestroika, Yeltsin and the RSFSR have decided to undertake these policies at the republican level. Not only does this represent an exercise in radical economic reform, but it also represents an exercise in
national independence, in this case for ethnic Russians. This may, in fact, represent a step on the road to a loose confederation of republics, which many see as the only possible solution to the nationalities problem and economic stagnation in the USSR.

As for Siberia, if implemented, the 500-day reform policies of Yeltsin will affect the region much as perestroika would under scenario two, i.e., if all of the policies were implemented. Siberia's role would remain the same, only now it would serve as a periphery to the RSFSR, rather than the USSR.

There is, however, a further extension to this scenario. The success of Yeltsin in promoting national independence and in getting Gorbachev to agree to radical reforms for the RSFSR, may foretell of a possible independence movement by Siberia, or parts of Siberia, to secede from Russia altogether. Today, such a scenario may seem far-fetched. In today's Soviet Union, however, what seemed far-fetched only months ago, is in the realm of possibility today. Also, there is historical precedence for such a scenario.

One must remember that Siberia is a fairly homogeneous ethnic region. Over 85 percent of the population is of Russian descent, while 95 percent is of European descent. Yet, there are major differences between Siberian-born Russians and European-
born Russians. Many Siberian Russian families have been in Siberia for generations, and they identify themselves as Siberians first, Russians second. As a result of their social origins, i.e., independent farmers, ostracized religious believers, political dissidents, etc., the Siberian has historically been independent in their actions and cynical of the policies of their European brothers and sisters, policies which are often to the detriment of Siberia.

The 19th and 20th centuries have seen manifestations of this Siberian psyche. There was a strong independence movement in the 19th century, fostered by dissidents such as the Decembrists, who argued for a Siberian experience to parallel the American independence movement. In the Soviet period, the 1920s saw an independent Far Eastern Republic, which actually established diplomatic relations with Soviet Russia. This republic was short-lived, as the Soviet state sought to regain all former tsarist territories after the Civil War. Yet, the spark of independence for at least parts of Siberia has been lit and reignited. If such a scenario begins to play itself out, it is most likely that West Siberia, because of its enormous resource value to European Russia and because historically it has not been involved these independence movements, would remain aligned with Russia, and independence would most likely gain support in parts of southern East Siberia and the Far East.
CONCLUSION: THE CHANGING ROLE OF
SIBERIAN URBANIZATION

These are uncertain times in Soviet studies. The real and proposed changes of Mikhail Gorbachev, and more recently Boris Yeltsin, call into question the future course of Siberian development and the nature of the relationship between Siberia and the European core. For the near future, Siberia's role within the Soviet national economy will remain the same as it has been for this century and for over two centuries before it. The potential, given the region's natural wealth, relative location, and Gorbachev's proposed initiatives for change, is unlimited. The only question, and one that has been asked and left unanswered for decades, is when. Major barriers remain to be confronted before an informed answer can be given.

We have already noted several fundamental barriers to comprehensive development. Actual implementation of the "radical reforms" so necessary as a precondition for development is the first. Traditional barriers to development have also been noted: resistance of pro-European policy makers to invest in eastern development, lack of economic and social infrastructure, and reluctance of foreign countries toward investment in Siberia. To these, one must also take into account financing, ecological concerns, and the nationalities question, all of which have been and may be affected by restructuring. Although there is not sufficient time to go into detail here, both of these are worthy
The program for restructuring the Soviet economy has brought with it policies of greater openness [glasnost'] and local autonomy [demokratizatsiya], which to date have had only minor impacts on Siberian development, but could greatly affect it in the future. Currently, the bulk of investment in Siberia comes from central government ministries, which concentrate on investments in industrial production at the expense of social infrastructure. In return, a great proportion of the profits from local enterprises is returned to the central ministries. Although data on this process are sparse, Schiffer provides an example whereby 98 percent of the profits from one East Siberian enterprise were returned to the central ministry for redistribution (Schiffer, 1989, pp. 94-95). Although this is only one case, there is no reason to assume that this is unusual. Changing this system and giving greater autonomy to local enterprises would enable them to keep and allocate a greater share of their profits, thus benefitting the local and regional economies to a much greater extent than presently possible.

Glasnost' has also provided a forum for those concerned with the natural environment of Siberia. Although there have been celebrated cases of environmental successes in protecting the ecology of the region, e.g., Lake Baykal and the water diversion schemes, Soviet development east of the Urals has an abysmal
recorded of disregard for the environment. An increasingly vociferous group concerned with ecological issues promises to challenge development projects in the delicate ecosystem known as Siberia and the Far East. Potentially, this concern may slow and prevent projects, greatly increasing the cost of development.

A final consideration concerns the growing demand for national autonomy and independence by minority ethnic groups throughout the Soviet Union. In Siberia, indigenous ethnic groups comprise only five percent of the total population. Yet, national independence may become an important issue because administrative territories already identified as autonomous ethnic regions within the Soviet Union, i.e., Autonomous Soviet Socialist Republics (ASSR's) and autonomous oblasts (AO's), account for sixty percent of the territory of Siberia. Not only do they comprise a large proportion of territory, they also encompass large regions of valuable resources.

In West Siberia, these territories include the Gorno-Altay, Khanty-Manisiysk and Yamalo-Nenets AO's. In East Siberia, they include the Buryat and Tuva ASSR's, and the Khakass, Taymyr, Yevenkiy, Ust'-Ordinsk Buryat and Aginsk-Buryat AO's. And in the Far East, they include the Yakut ASSR, and the Yevreysk, Koryak and Chukot AO's.

After centuries of domination by the Russian and Soviet
empires, the movement for an independent RSFSR or an independent Siberia or Far East would certainly not dampen the demands from these peoples, since they would still subjugated to Russians. This question could act as a major barrier to the development of Siberia under any of the various scenarios proposed in this study.

So, Siberia must still wait for its role to change, for the basic nature of its development to become comprehensive, designed to benefit regional and local development at the expense of national and international markets. For now, as it has been for the entire Soviet period, Siberia remains dependent on the core for its growth, serving as a resource frontier for European Russia and the world.
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Ekonomicheskaya geografiya SSSR, chast' II. Moscow, 1989.


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Figure 7

POPULATION

- one million+
- 500-one million
- 100-499 thousand
- 50-99
- below 50
APPENDIX 1

Siberian Urban Agglomerations

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Format: Central city
Satellite cities w/pops. of 50,000, by size
Satellite cities below 50,000, alphabetically
Urban-type settlements, alphabetically
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   - Svirk 21 20
   - Baykal'sk

   - Bol'shaya Rechka
   - Bol'shoy Lug
   - Bokhan
   - Zabituy
   - Kitoy
   - Kultuk
   - Listvyanka
   - Meget
   - Mikhaylovka
   - Mishelevka
   - Tayturka
   - Telma
   - Ust'-Ordynskiy

12. Chita
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    - Atamanovka
    - Darasun
    - Drovyannaya
    - Karymskoye
    - Novokruchininskiy
    - Yablonovo

13. Ulan-Ude
    - 174 254 300 335

    - Zaigraevo
    - Zarechnyy
    - Ivolginsk
    - Kamensk
    - Onokhoy
    - Sokol

78


14. Bratsk 43 155 214 240
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15. Noril'sk 118 135 180 180
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  - 533
  - 578

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- **Biysk**
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  - 80
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  - 186
  - 212
  - 226

- **Zarinsk**
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- **Zmeinogorsk**
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- **Kamen'-na-Obi**
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- **Novoaltaysk**
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  - 50

- **Rubtsovsk**
  - 1927
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  - 145
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- **Slavgorod**
  - 1917
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- **Belokurikha**
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- **[Shcheglovsk]**

- **Anzhero-Sudzhen**
  - 1931
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  - 105
  - 110

- **Belovo**
  - 1938
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- **Berezovskiy**
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- **Gur'evsk**
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- **Kiselevsk**
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- **Leninsk-Kuznets**
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- **Myski**
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APPENDIX 3

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