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## **Impact of Demographic and Areal Changes on Urban Growth: A Case Study of Srinagar City**

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### **ABSTRACT**

The present study aims to analyze the spatial growth of Srinagar city, its expansion in order to find out the pace and direction of growth from 1971 to 2001. Urban sprawl leads to haphazard patch work of development, which results in improper development of any city. The trend of population of the city has been analyzed, as it is the main factor for the expansion of any city. It has presented the scenario of the change in the land use pattern for the same period. The expansion of the city has shown rapid growth in the reference period. It is found that the land use pattern of Srinagar city shows a tilt towards residential areas, which cover the greater portion of the city and this is expected to increase in future.

*Keywords: Urbanization, Areal, Urban Sprawl, Merger, Expansion.*

### **INTRODUCTION**

Rapid urbanization in the world is quite alarming especially, in developing countries like India. Urbanization is a process through which the productive agricultural land, forests, surface water bodies and ground water prospects are being irretrievably lost [1]. All cities have an image. Infact, it would be truer to say that all cities have, and always have had, a number of images. The only consistent thing about cities is that they are always changing. Everywhere cities have grown both in size and considerable population [2]. Cities are a complex agglomeration of multi-activities: economic, social, cultural etc [3]. Urbanization on the one hand acts as a centripetal force, attracting people to towns and cities; on the other hand it also acts as centrifugal force, radiating its influence outwards, which reinforces its centripetal role [4]. Urbanization in its most general sense refers to the complex set of processes by which the proportion of the country's population concentrated in urban areas increase over time [5]. Urban sprawl has become the catch phrase for everything that is bad about urban growth today-congestion, blight, monotony, endless development and ecological destruction [6].

Rapid urbanization has resulted due to the several factors. However, the natural growth of the population, the rural to urban migration are important in it [7]. Rapid urbanization causes disorganized and unplanned growth of the towns and cities. The pressure of an ever growing population becomes the burden on the limited civic amenities which are virtually collapsing; there is the need to balance present requirements of land against future needs. Prevention of agriculture land in the fringe area of expanding cities is a vital for preserving and maintaining open space and therefore environmental qualities

[8]. Urban growth has resulted in the conversion of land for urban uses without any systematic development plan and without a corresponding investment in infrastructure. Poor land management has resulted in urban areas with inadequate services, infrastructure and corresponding lack of accessibility, that may prove very costly to resolve in future [9]. To prevent urban sprawl which leads to an improper development, it is necessary to monitor the growth of city for sustainable urban development [10]. it is important to study the and understand these trend of urban sprawl as it is one of the potential threats to sustainable development where urban planning with effective resource utilization and allocation of infrastructure initiatives are the key concerns and would help in effective land use planning in urban areas [11].

The growth of large cities in India has drawn the considerable attention of Geographers, planners, Economists, Sociologists, Demographers and other related discipliners to study the problem arising out of the rapid urbanization from their prospective angles. Since geographer is a spatial man, tries to analyze the city growth in terms of 'Process', 'Structure' and 'Stage'. The present study tries to analyze the various dimensions of growth and problems which are associated with the growth of one of the fast growing and largest urban centre of the Jammu and Kashmir State. Rapid urbanization causes disorganized and unplanned growth of towns and cities. The pressure of ever growing population becomes burden and leads to the expansion of the city in its countryside. Cities can be studied and analyzed from a number of standard points. The present study is primarily concerned with Srinagar city, from its expansion point of view. A city is not an isolated entity; it is a product of relationship with its surrounding area. Cities do not grow of themselves but it is the countryside which sets

them to do task which must be performed by them [12]. The size of a city is dependent on the nature and function of the area surrounding it while the economy of the city, in turn, determines the activities of the surrounding area. Srinagar is not only the largest urban centre both in terms of population and areal extent, but also the rapidly growing city amongst the Himalayan urban centres. Markets or commercial centers not only play an important role in the urban expansion of a city but also social, cultural, political and religious activities also gets influenced by the city market which in turn support urbanization or urban expansion of a city [13].

Srinagar has chequered historical background behind it. The name of the city was 'Srinagari' which means Appellation of the Goddess Lakeshmi, according to Kalhana, is one of the most important cities of Kashmir. It was founded by Ashoka, the Great during 250 B.C commemorate the Buddhist monastery and the city occupied the site of Pandrethan. It remained the capital of Kashmir till about the middle of the 6th century A. D when new city known as Parvarasen, near Hariparbat hill extended along the right bank of Vitasta (Jhelum).

## METHODOLOGY

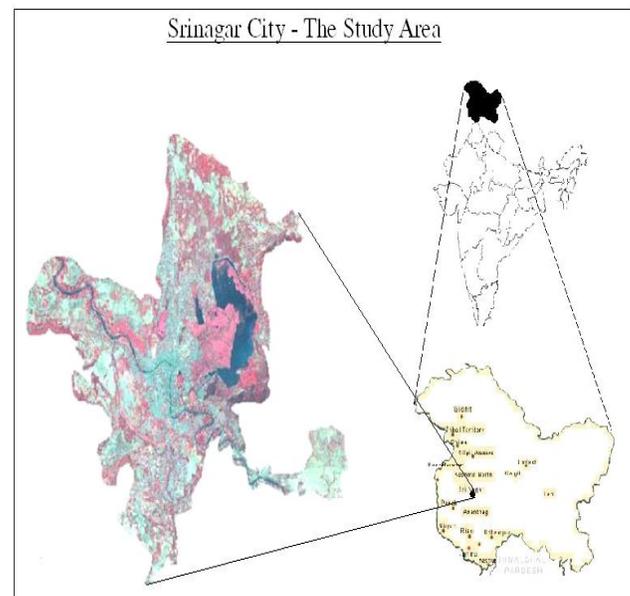
The study is basically a descriptive research consisting of a fact-finding operation and survey of the opinion and characteristics of a given population. For the analysis of growth of the city over a period of time, both in terms of area and population requires multi-temporal data. Hence the data pertaining to the study includes trends in population growth, areal growth, changes in land use pattern of different periods. The study is mainly based on secondary data, collected from various publication of census of India, Srinagar Municipal Corporation, Srinagar Development Authority (SDA), and Town Planning Organisation. The data has been analyzed to identify the number of villages merged in to the city at different periods of time. On the basis of its trend and direction of growth, future indications have analyzed. ArcGis and AutoCAD Software's have been used to make different thematic maps.

## STUDY AREA

The city of Srinagar which is located at an elevation of 1800 meters above the sea level, spread over in the midst of an oval shaped valley of Kashmir. The city as well as its hinterland is encircled by natural walls of mountains (the sub mountain branch of Pir Panjal range), In the east the city is bounded by Zanaskar Mountains with lush green vegetation, locating the famous Dachigam Sanctuary and Mughal gardens on its slope and is environed by the shallow swampy lakes of the Dal and Nagin in the north east, the eminence hillock of Takth-i-Suluiman (Shankaracharya) in the south east, the Kohi-Mareen hillock (Hariparbat) in the centre, Rakh-i-Gandakshah in the west, the Anchar lake and the Palapora boggy in the north west, Namble-i-Narkura and Karewa Damodar (uplands)

in the south east. However the hinterland of the Srinagar city is very rich despite these physical diversities.

The city has cradled itself between the hills of Hariparbat and Shankaracharya along the banks of river Jhelum, flows through the heart of the city. Srinagar city extends from 34°5'23" to 34.08972° North latitude and 74°47'24" to 74.79° East Longitude. Though the city has served as the capital of Kashmir throughout the ages it has not experienced demographic and areal sprawl in the ancient and the medieval period which is largely outcome of political instability and frequent change of capital sites. However, the city has successfully survival against all the odds. A product of rich and variegated history, the city owes its survival much to the characteristics of centrality so far as site and situation are concerned. Secondly, it possesses the distinction of being the leading political, social, cultural, and trade and commercial centre throughout the ages which enable the rulers to rule over the entire Kashmir valley. The present city has grown as blend of a number of ancient cities which had served as capital cities from time to time for various rulers indicating that the growth of the city in general had poly-nucleus expansion and the later growth took place under the process of accretion resulting from the double action of centripetal and centrifugal forces.



**Figure: 1.** Location Map of Srinagar City

## SPATIAL EXPANSION OF SRINAGAR CITY: A GEOGRAPHICAL ANALYSIS.

From 1971 to 2001, the spatial growth of Srinagar city has accelerated as the area has increased from 81.88 sq km in 1971 to 208.09 sq km in 2001. This unprecedented rate of physical expansion has resulted in a gradual change of orchards and vegetable gardens into residential and other urban land uses. Many residential, administrative, commercial,

industrial and educational areas which now exist were either the orchards or malliyari gardens in the past. A number of mohallas namely; Padshahibagh, Alohabagh, Wazirbagh, Batapora, Habbak, Parimpora, Ram Munshibagh, Bucuhpora, owe their names either to orchards or vegetable gardens. With the rapid urbanization, the process of conversion of vegetable land and orchard gardens into different urban uses has gained momentum and was accompanied with the haphazard growth and development, stemming different problems like drainage, sewerage and civic amenities and all other facilities in all most all the newly developed parts of the city.

The rapid population growth due to both the migration and counter urbanization and the proliferation of economic activities caused spilling over the out strikes of Srinagar city. The areal sprawl which is taking place constantly has become an inevitable phenomenon. In the process of leapfrogging and infilling of urban growth of residential, industrial, and institutional land use, the main determinants were and will be axial transport routes particularly for industries, proximity to the city core, preference for location near the outwards moving edge of the city to avoid congestion and the ability of space at the city outskirts. The enhanced transport facilities and the construction of bypass of national highway from Athwajan in the South East to Parimpora in the North West, the emergence of a number of large residential colonies on the outskirts of the city as a result the process of depopulation from the high congested core and the location of industrial establishments like State Industrial Development Corporation (SIDCO) and the Hindustan Machine Tools (HMT), all opened and new structures in the vicinity of these industrial establishments and along the axial transport routs have led to the elongated spatial growth and thus made the Srinagar a sprawled city.

The data regarding the spatial growth of the Srinagar city is available from 1901 to 2001, as no systematic data are available regarding the areal sprawl before 1901. The spatial growth of Srinagar city shall be examined on the detailed from 1971 to 2001. The spatial growth of the city has increased from 12.80 sq. Km in 1901 to 82.88 sq km in 1971, but after 1971 the city had shown very much growth in its areal expansion.

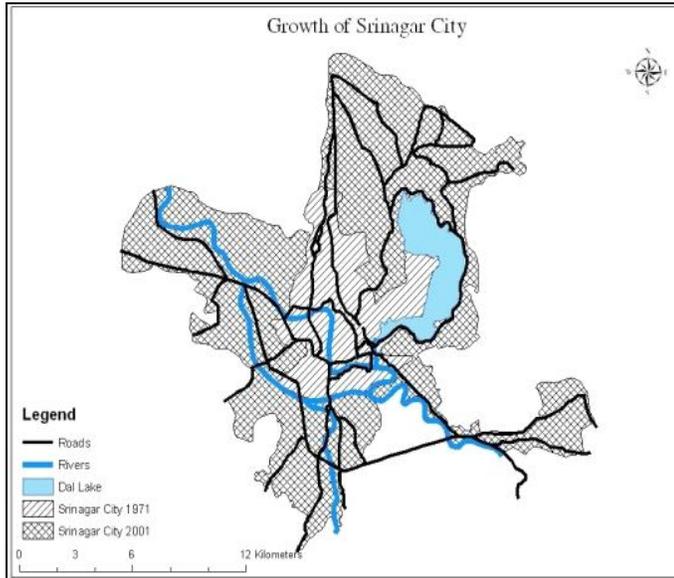
**Table: 1.** Spatial Growth of the city from 1901 to 2001.

Year	Area (km <sup>2</sup> )	Decadal variation	Year	Area (km <sup>2</sup> )	Decadal variation
1901	12.80	--	1961	41.42	+16.92
1911	12.85	+0.5	1971	81.88	+41.44
1921	14.48	+1.63	1981	208.09	+125.39
1931	17.60	+3.12	1991	N.A	N.A
1941	17.60	0	2001	278.1	+35.0
1951	29.52	+11.29			

*Source: Town Directory, series-8, part X-A, Jammu and Kashmir 1981 and Srinagar Municipal Corporation.*

The rate of growth accelerated during the period of 1971 to 2001, as the city experienced an unwarranted physical growth.

The areal expense of the city increased from 81.88 square kilometres in 1971 to 208.09 square kilometres during this decade. The main reason for such a substantial growth of the city was merger of 62 villages in 1971 and in 1981 definitional change from Standard Urban Area to Urban Agglomeration which resulted in to the merger of 42 villages with the city limits. The depopulation from the city core also contributed to the areal sprawl of the city. Another important reason for such a rapid areal sprawl of city during this period is the development and enhanced transport facilities which not only resulted in the emergence of a number of residential colonies like Natipora, Chasnora, Hyderpora, Bemina etc., on the out strikes of the city in all directions, but also numerous other small settlements have appeared along the major highways radiating from the city or joining the city. Moreover the location of industrial establishments namely Hindustan Machine Tools (HMT) and State Industrial Development Corporation (SIDCO) in the out strikes of the city have also helped in wide spread areal growth of the city. However, there has been new delimitation of city municipal limits after 1981 to 1991, instead a number of settlements (Nowgam, Lasjan and Soitang) have been excluded from the city municipal limits in 1978. The areal figure of the city have remained unchanged since 1981 to 1991 because of no new delimitation of the city limits has taken place during this period and therefore no data regarding the spatial expansion of the city during 1981 – 1991 is available. However, according to the new delimitation, the area of the city has increased from 208.08 square kilometres in 1981 to 278.1 square kilometres in 2001, registering a net growth of 70 square kilometres during these twenty years. A number of newly emerged residential colonies have been included in the city limits in all the directions. The present spatial limit of the city is in contiguous with the urban centre of Pampore and Ganderbal in the south-east and north-east, where as it is up to Budgam urban centre in the south-west and almost to the urban centre of Pattan in the west comprising in its limits a number of residential colonies of Hyderpora, Peerbagh, Humhama, Sanat Nagar, Rawalpora, Nowgam, Zainkoot Shaltang, Zakura and Gulab Bag. The urban centers of Pampore, Ganderbal, Budgam and pattan are expected to be notified as the satellite towns of Greater Srinagar which will form the part of the State Capital Region by 2015.



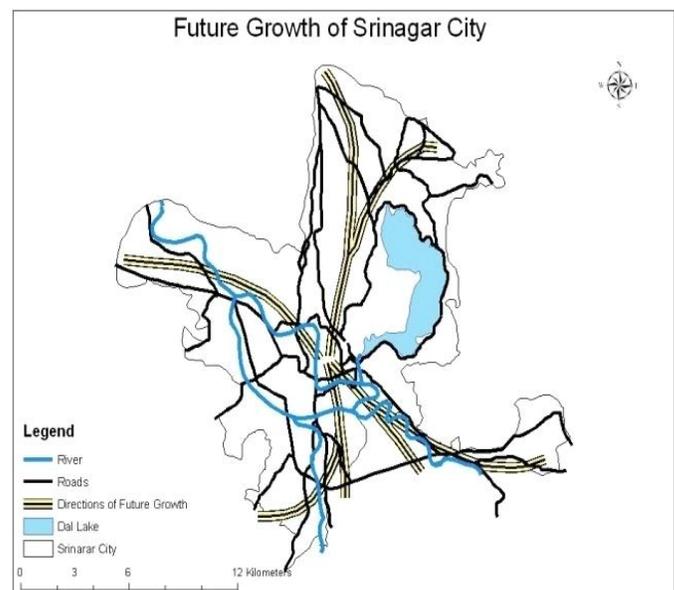
**Figure: 2.**Growth of Srinagar City.

### FUTURE GROWTH

Constraints that lie on the expansion of the city in the lateral directions lie in its setting as it exists. On the east and the northern side, the city is bounded by Zabarwan Mountains (sub-mountain range of Pir Panchal Range). Srinagar city has grown sixteen times in the size during the last century from 1901 to 2001 and particularly this growth has been substantial during the last four decades from 1961 to 2001. If this trend continues, sooner or later, the city would encroach up to the neighbouring tehsils of Budgam, Chadora, Pampore and Ganderbal so as to form a State Capital Region. As the city has a unique location and is situated in the core of the Kashmir Valley, the potential for the future growth of the city are generally found in north direction along both the arteries approaching to Ganderbal, in the west along the Srinagar – Gulmarg road, along the Foot hills of Zabarwan mountains along the Srinagar Jammu road in the south east and along the Charaisharief, New Airport road and Budgam arteries in the south.. Similarly in the south-east along the Nation Highway Badami Bagh side, the city was witnessed unprecedented physical expansion of many expansion but congested residential settlement pockets namely Shivpora, Batwara, Panderathann, Athwajan, Panthachock, Sempora, Zewan and Zaffran colony. The ribbon growth has imperceptibly touched the boundaries of Pampore town and in near future it is expected that both the city as well as Pampore town may join together and form a single urban entity. The approach road from the Baramulla and Gulmarg which enters the city in the west has been also subjected to rapid urban growth. The process of spatial expansion has been further accelerated by the shift of fruit mandi to Parimpora and the construction of bypass road passing through Parimpora. The development of Bemina colony on the low lying land and the accelerated

building activities in the low lying area of Hyderpora and Nowgam in the south have also opened the new areas of expansion of city limits. The city sub centre of the Batamaloo has partly lost its status of regional transport yard as it has been partly shifted to Panthachowk for creating the transport service to the southern districts of the valley. It has been also observed that the Central Business District (CBD) Lal Chowk is fastly losing its importance and instead a number of city sub-centres are emerging as educational, health, commercial, financial, institutional and transport sub-districts around the residential colonies of Rajbagh, Peerbagh, Hyderpora, Bemina, Soura and Nowgam which have facilitated the expansion of new areas in the rural hinterland of the city.

Despite the constraints posed by the urban water bodies and the wet land of Dal Lake and the mountains in the east, Nambal (Marshy) land and the Anchar Lake in the north-west, low lying and flood prone area in the south, the city is experiencing urban sprawl in these areas because of rapid urbanization which is evident from the fact that building activities are heavily taking place in and around the Dal Lake and Wet lands of the city. Thus, the unwarranted growth of the city is becoming a haphazard for scenic beauty that in turn will have retarding impact on the tourism which is one of the key sectors of the state economy. Restriction have, however, been imposed on the building activities inside the Lake. Along the Lake front and foot hills near the lake which is being supervised by the lake and Waterway Development Authority. It is pertinent to mention here that the area of Dal Lake has shrunk from 19.6 square kilometres in 1978 to 16.4 square kilometres in 2005.



**Figure: 3.**Future Growth of Srinagar City.

## POPULATION GROWTH

However it may be noted that Srinagar city has been largest urban settlement of the Kashmir valley throughout the ages and continues to be the same even at present. The figure of population growth are relatively reliable only since enumeration of 1901, therefore it may be taken as a base for further analysis of growth trend and decadal variation in the population of the city. The table 1.2 presents the pattern of population growth and percentage of variation during different decades.

**Table: 2.** Population of Srinagar city (1901 – 2001)

Year	Area Km <sup>2</sup>	Decad al variati on of area	Population	Density	Decadal Growth Rate of population
1901	12.80	---	122618	9579	---
1911	12.85	+0.05	126344	9832	+3.04
1921	14.48	+1.63	141735	9788	+12.18
1931	17.60	+3.12	173573	9862	+22.46
1941	17.60	--	207787	11806	+19.71
1951	29.52	+11.92	246522	8351	+18.64
1961	41.42	+16.92	285257	6884	+15.71
1971	81.88	+41.44	403413	4867	+41.42
1981	208.0 9	+125.3 9	606002	2912	+50.23
1991	N. A	N.A	N. A	N. A	N. A
2001	278.1	+69.2	971357	3492	+30.14

*Source: Census of India, 2001, Master Plan 1971, 2001 and Srinagar Municipal Corporation.*

The table indicates that the population growth of Srinagar city has not been uniform. In the early decades from 1901 to 1961, the growth has been slow due to the low growth rate which has declined from 22.46 per cent in 1931 to 15.71 percent in 1961. The decline growth rate could be attributed to the political unrest and partition of the subcontinent in 1947 which led to the large scale migration of people. It was after 1961, that a new phase of growth of population commenced. The population of the city increased from 285,257 persons in 1961 to 606002 persons in 1998, recording a net addition of 320,745 persons. The main factors responsible for this accelerated population growth during these two decades have been in migration, increase in birth rates and fall in death rates. Besides this, the merger of 62 villages in municipal limits in 1971 and the introduction of urban agglomeration concept which brought a number of rural areas under the jurisdiction of Srinagar city are indeed the other factors contributing to the rapid growth of the city population. Subsequently from 1981 to 2001 the population increased to 971357 persons in 2001, registering a net growth of 365,355

persons in the two decades with a decadal growth of 30.14 per cent.

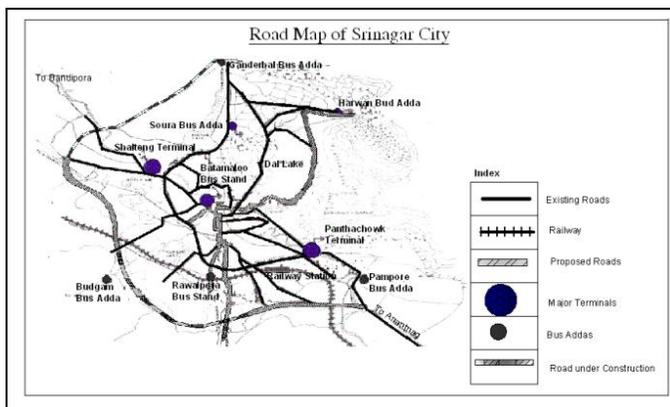
The dynamic trend in the population growth of Srinagar city suggested an accelerated rate of growth of city population growth in future which reveals that the city will achieve the metropolitan status in near future. The anticipated rate of change in demographic dimension of the city is bound to create an impact on the socio-economic structure of the city and may accentuate the problem of housing scarcity, land speculation and urban blight and slum. The city has shown a close relationship between the physical growth and density of population. In 1901, the area of the city was 12.80 square kilometres having the density of 9579 persons per square kilometres which increased to 17.60 and density 11806 persons per square kilometres respectively in 1941. The main reason for such a phenomenal increase in the density of population was that the urban growth of Srinagar city was concentrated in and around the present core area which on the one hand recorded increase in the population but physical expansion was confined with the limited area and consequently resulting the high density of population. Later on the trend of urban growth changed from the concentric towards the dispersal and disintegrated which resulted in the wide spread expansion of the city and decrease the density of population. The area of the city has increased from 17.60 square kilometres in 1941 to 278.1 square kilometres in 2001. The increase in the size of the city was though accompanied by the growth in its population but not with the same proportion which decreased considerably the density of population of the city. The density of population decreased from 11806 persons per square kilometres in 1941 to 2912 in 1961 persons per square kilometres. However the density has again increased in 2001 to 3492 persons per square kilometres because of the comparatively lesser expansion in the city limits as compared to earlier decades.

## ROAD TRAFFIC AND TRANSPORTATION IN SRINAGAR CITY

It was not our wealth that led to good transport infrastructure, but our good transport infrastructure led to our wealth (John F. Kennedy). Srinagar city is characterized by radial pattern of development and the transportation corridors have primarily been responsible for the development of certain areas as compared to others. Transportation infrastructure is grossly inadequate to cater to the present intensity of traffic and most of the street system including major arterial network has a level of service which is far below the prescribed standards. Traffic congestion is most acute in CBD and inadequacy of pedestrian facilities compound the problem of traffic congestion due to increased traffic conflict. Inadequacy of accessibility of traffic infrastructure has resulted in the obsolescence of the core city and hence stagnation. There are clear distortions in the hierarchy of the transportation network and the absence or lack of grade separators, intra-city terminals and parking facilities have resulted in the

overstraining of deficient infrastructure. It also needed special mention that the foot paths existing are not in accordance with the IRC specifications.

As a matter of fact, footpaths are provided to ensure safe passage for pedestrians & these are illegally occupied by vendors & shopkeepers & there remains no room left for the pedestrians to escape the road fatality in the Srinagar city. The PDD officials have also erected electric poles on foot paths, putting thereby obstructions to free movement of pedestrians. It also needed special mention that the foot paths existing are not in accordance with the IRC specifications. These are specific guidelines laid down for their size & shape, but state engineers have consigned these norms to flames.



**Figure: 4.** Road Map of Srinagar City

Source: Town planning organization

#### ***Irrational transport policy***

About 72 percent population lives in the rural areas of the Kashmir valley and about 28 percent of the population lives in the Srinagar city. Against meager 21 percent of transport registered in the rural areas, huge 79 percent of the transport is registered in this city.

#### ***Mismatching Traffic police strength***

The strength of the traffic police in Srinagar city does not correspond with the vehicular population. The blue cop who would look after about 36 vehicles in 1982 is now registered to manage about 500 vehicles daily, which, prima-facie seems cumbersome. This mismatching of traffic police with traffic on roads adversely affect the functioning of the traffic police. The sparse presence of traffic police on the roads proves a boon to the violation of traffic rules and ultimately causes the road accidents.

#### ***Traffic peak hours***

In Srinagar city, 75 percent of accidents and increased fatalities take place during the morning hours (9 am – 11 am) and evening hours (4 pm – 6 pm). This is the peak timing of mobility of public, which mostly include school going children and office goers besides others who move to and fro cities and towns in connection with business and office work

etc. This obviously results into overloading. To address the problem, peak hour traffic management is required to be done besides other measures by ARTOs.

#### ***Increase of vehicles***

During past 5 years the vehicular population in Srinagar city increased from 1, 23,319 in March 2005 to 1, 56,991 in March 2009 indicating an increase of 27 percent vehicles. But there has not been a commensurate increase in the parking slots. The multiple increases in the vehicular population in the city without significant increase in the parking slots has resulted into choking of the city roads. There are about 2 dozen parking places in the city having a capacity of about 5,000 vehicles only for a huge personalized transport of 1,15,396 vehicles the parking is too much insufficient to accommodate the personalized transport registered in city as parking space for at least 10,000 vehicles is required in the city. The non-commensurate parking slots in the city force the personalized transport drivers to park their vehicles in the middle of the carriage way leading to the traffic jams and accidents.

#### ***Flow of traffic at intersections***

Traffic flow means, the number of vehicles passing a given point in a given time. Traffic flow is expressed as vehicles per hour.

In Srinagar city, there are 67 intersections with 22 as 4-arm and 45 as 3-arm. These intersections witnessed huge traffic pressure. The average traffic pressure on each intersection comes to around 50,000 vehicles per day.

#### ***Parking***

The increased vehicle ownership has implications which not only demand large road space but there is also an exorbitant demand for parking spaces particularly in the central areas. Absence of organised car parking has resulted in parking along kerbs on streets. This has not only reduced the capacity of the roads but has also become health hazardous and a major pedestrian - vehicle conflict. Parking supply and demand has been analysed for the CBD which has relatively high parking demand. Only small spaces have been carved out which are inadequate to meet the increasing parking demand in CBD.

#### **LAND USE PATTERN**

Urban centres generally consist of two types of land uses, build-up and non-build-up. Non-build-up includes land under water bodies, mountains, marshes, orchards, gardens and grave yards while as the build-up area include land under residential, commercial, industrial, governmental, community facility, parks and grounds, defence and other uses. In other words we can say that build-up area includes the land under different functions. Out of the total area available to Srinagar city 1971, 2556.50 hectares was build-up in 1971 and 6626.03 hectares in 2011. As per the data the build-up has shown an increase of 4069.53 hectares in four decades. The area under non-build up area has shown a decreasing trend in the same period i.e., from 20890.00 hectares in 1971 to 16820.47 hectares in 2011 showing a decrease of -4069.53 hectares

The foregoing account of the land use of Srinagar city provides a base for accessing its major social areas and location of different functions. The table, 1.3 gives the area under different land uses in 1971, and 2011.

**Table: 3.**Land use pattern in Srinagar City: 1971 - 2011.

Land-use Category	1971 (Hectares)	1971 (%age)	2011 (Hectares)	2011 (%)	Change
Residential	1074.5	4.58	4013.11	17.20	2938.61
Industrial	90.50	0.39	226.50	0.97	136
Parks/ gardens etc	140.00	0.59	373.04	1.62	233.04
Commercial	143.5	0.61	283.92	1.21	140.42
Vacant	517.00	2.20	245.30	1.05	-271.17
Restricted	446.00	1.90	715.00	3.05	269.00
Plantation/ orchards	1266.50	5.40	2623.03	11.19	1356.53
Agriculture	14408.00	61.45	10957.10	46.73	-3450.9
Barren	539.50	2.30	480	2.05	-59.50
Forests	346.5	1.47	153.50	0.65	-193.00
Water body	2145.50	9.15	1893.90	8.08	-251.60
Marshy	1667.00	7.10	467.50	2.00	-1199.50
Others	662.00	2.83	1014.46	4.33	352.46
<b>Total</b>	<b>23446.50</b>	<b>100.0</b>	<b>23446.50</b>	<b>100.00</b>	
<b>Total Build up</b>	<b>2556.50</b>		<b>6626.03</b>		<b>4080.53</b>
<b>Total Non-build up</b>	<b>20890.00</b>		<b>16820.47</b>		<b>-4069.53</b>

## FINDINGS

- As the Srinagar city has shown the accelerated expansion from 1961 though rate of physical expansion of Srinagar city was not same in all these decades, it was fluctuating. Maximum expansion of the city was noticed during 1971 to 1981 and minimum was during 1961 to 1971. This is very natural because when the increase of population and economic activities take place, the territorial limits of the city go on increasing. The spatial expansion is

closely associated and commonly dependent on the population growth.

- The population of the Srinagar city has increased considerably during 1901 to 2001. It was 122618 persons in 1901 which increased to 971357 persons in 2001. During this period both the population and the geographical area have significantly increased. The geographical area of the city has expanded from 12.80 square kilometers in 1901 to 278.1 in 2001.
- Srinagar city is expanding more towards north, south and western direction, although it has also shown its expansion in south eastern direction also.
- With the rapid urbanization, the process of conversion of vegetable land and orchard gardens (like Padshahibagh, Alochabagh, Wazirbagh, Batapora, Habbak, Parimpora, Ram Munshibagh, Bucuhpora,) into different urban uses has gained momentum and was accompanied with the haphazard growth and development, stemming different problems like drainage, sewerage and civic amenities and all other facilities in all most all the newly developed parts of the city.

The sprawl of the city leaves marked impact on the land use pattern. The growth of Srinagar city not only changes the land use pattern of the city but also of the surrounding areas but also internal morphology of the city The land use pattern has shown the marked increase in residential use, which has increased from 1074.5 hectares in 1971 to 4013.11 hectares in 2011 showing an increase of 2938.61 hectares.

## CONCLUSION

As the Srinagar city is a tourist centre, it should be developed in such a manner that it should not detract the ecological system. The quality of urban life is reducing and urban chaos's are growing so much so that these problems have drawn the attention of various displacers to come forward with a view to solve the existing problems and suggest some development measures. There is an urgent need to look into the agricultural system in the surrounding areas of the city.

Growth in infrastructure has not kept pace with the growth of the population, resulting in disequilibrium in the level of development. The city expansion however brings a number of problems like scarcity of space, housing, infrastructure, services and loss of agricultural land. These problems require immediate attention of the planners and administrators. Agricultural land is being gradually converted into built-up land for industrial, commercial, residential and other uses in the haphazard manner. The Srinagar Development Authority has to pay great attention not only towards the maintenance of the main city, but also the surrounding areas because in near future it will become the part of the city.

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