

Transition from the Vehicle-oriented City to the Pedestrian-friendly City

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Background of Transition to the Pedestrian-friendly City

Seoul has pursued industrialization and urbanization to achieve urban growth in the past, establishing a vehicle-oriented transport system that had advantages in ensuring urban competitiveness. The structure of city space focusing on vehicles reduced the space for pedestrians and lowered urban vitality. Due to the indiscriminate development, lots of pedestrian roads with cultural and historical value disappeared and the value of remaining footpaths were not utilized properly.

To address this situation, Seoul implemented various policies to create a pleasant and safe walk environment in order to develop Seoul as a pedestrian-friendly city. The policy of Seoul to create a pedestrian-friendly city began with the project 'Creation of pedestrian-friendly walkways' in 1998 in earnest. The Seoul plaza was built in front of Seoul City Hall in 2004, and the Cheonggyecheon (creek) restoration project was implemented in 2005 to remove large roads for vehicles and create space for walkways instead. During the period of 2007~2011, Seoul implemented the projects of 'Design Seoul Street' and 'Street Renaissance' to unify the designs of public facilities on the streets and improve the pavement of the walkways. In April 2012, Seoul announced the '10 Commandments on the Pavement in Seoul' to reduce the inconvenience of the pedestrians. According to the slogan, various projects including the 'sidewalk construction in real name' to inscribe the contractor's name on the sidewalks, the 'one strike out system' to restrict poor construction companies from participating in the biddings and 'securing temporary pedestrian walkways' at construction sites to improve pedestrian environments were implemented.

The pedestrian environments experienced by the citizens of Seoul did not seem greatly improved, in spite of the fact that Seoul had implemented pedestrian-friendly policies consistently. As of 2013, 78% of all the roads in downtown Seoul were roads for living less than 12 meters in width, but the citizens experienced discomfort passing through due to lots of illegally parked vehicles. The width of the walkways were over the minimum 2 meters mandated according to related regulations, but the sidewalks actually felt very narrow to the citizens because there were bollards, ventilation openings, roadside trees, etc. everywhere creating disorder. Out of the total number of road casualties, pedestrians made up 57.0% (as of 2011), raising the safety problems that pedestrians were facing. In a survey of the most unstable, inconvenient and unpleasant facilities conducted by Seoul in 2011, the walkways and roadways were ranked second and third making up 17.7% and 10.3% of the votes respectively. That means the pedestrians believed their environments were very poor.

In 2013, Seoul presented the 'Seoul Vision for the Pedestrian-friendly City' and prepared ways for Seoul to improve the pedestrian environment. The contents of 10 projects such as pedestrian-only streets, pedestrian-friendly areas, introduction and expansion of pedestrian priority roads, vehicle speed limits, improvements to the traffic signal system for pedestrians, creation of downtown pedestrian roads and the Seoul walkathon were parts of the vision.

Main Contents of the Pedestrian Policies by Period

Main Pedestrian Policies of Seoul by Period

Until the early 1990s, pedestrian traffic accidents had occurred frequently due to the harsh pedestrian environment in Seoul, and accordingly, the citizens' demands for the improvement of narrow walkways was increasing. Seoul began to prepare systems to improve the pedestrian environment by implementing an act establishing children protection zones in 1996 and an ordinance on the pedestrian roads in 1997. Seoul started the projects for pedestrian road improvement by creating a street without cars in 1997, and pedestrian-friendly walkways in 1998. The Seoul Plaza, created in 2004, was noted because it was made by eliminating the intersections and driveways in the downtown area to create a large lawn area of 13,207m² for pedestrians. Since then, it has become a foundation in the implementation of pedestrian related policies in Seoul. The design Seoul project executed from 2007 was not only intended to improve the pedestrian environment, but also to add aesthetic elements to the pedestrian passages to give pedestrians the feeling of satisfaction when passing the walkways. Seoul organized a department for the pedestrians and bikes under the Seoul City Traffic Headquarters in 2010. The department has devoted itself only to implementing the policies related to pedestrians and bikes. Seoul has made continuous efforts to improve the pedestrian environment by implementing various policies such as designation of pedestrian priority areas, execution of Seoul Street Renaissance Project, announcement of the 'Seoul Vision for the Pedestrian-friendly City,' etc. Specifically, the 'Seoul Vision for the Pedestrian-friendly City' was noted because it contained 10 action plans to improve the entire pedestrian environment by expanding pedestrian-only streets and pedestrian-friendly streets, installing additional crosswalks in downtown areas and introducing pedestrian priority streets in residential areas. The main policies related to pedestrians are as follows;

- In the Early 1990s: Movement on pedestrian rights for safety issues in the school zone walkways and alleys in residential areas.
- 1996: Legislation of an act establishing children protection zones.
- 1997: Legislation of ordinance on pedestrians in Seoul. Establishment of car-free streets (Insa-dong, Myeongdong-gil, Gwancheoldong-gil).
- 1998: Implementation of pedestrian-friendly walkway project. Establishment of the 1st basic plan for pedestrian environment of Seoul.
- 1999: Installation of a crosswalk on the north-south side of the Sejongno intersection. Implementation of the Green Way Project.
- 2000: Installation of a crosswalk in front of the Seoul Arts Center.
- 2004: Creation of Seoul Plaza.
- 2005: Establishment of the 2nd basic plan for pedestrian environment of Seoul.
- 2007: Implementation of design Seoul street creation project.
- 2008: Implementation of a pilot project for pedestrian priority areas. Implementation of Seoul Street Renaissance.
- 2009: Establishment of a plan to improve pedestrian traffic.
- 2010: Establishment of a new department for pedestrians and bikes within the Seoul City Traffic Headquarters.
- 2012: Legislation of an act meant to secure and protect pedestrian rights and improve pedestrian convenience.
- 2013: Announcement of Seoul Vision for the Pedestrian-friendly City.

<Figure 1> Paradigm of the Main Pedestrian Policies by Period

1995~1997	1998~2002	2002~2005	2007~2011	2011~
Green Traffic Plans	Pedestrian-friendly Street	Cheonggyecheon and Bus-only Lane	Street Renaissance	Pedestrian-friendly City
Installation of a department responsible for the pedestrian for the first time.	Designation of streets including Jeongdong-gil. Expanded to the landscape and tourism levels.	Creation of Seoul Plans. Restoration of Cheonggyecheon after demolishing the Cheonggye Expressway.	Establishment of a design concept. Media board on Gangnam Street.	Remodeling of the overpass at Seoul Station and Se-un Arcade. Improvement of pedestrian environment.

Source: JoongAng Ilbo (2014)

Main Pedestrian Policies of Seoul

Legislation of an Ordinance on Pedestrians

Seoul is the city that enacted an ordinance on pedestrians for the first time among local governments around the world. The legislation of the ordinance had been the cornerstone to evolve Seoul from the vehicle-oriented city to the 'pedestrian-friendly city' that aims to put people first. The ordinance began to be prepared and developed while the civic groups insisted and its necessity was broadcasted to the public. In December 1995, the city council members of the Transportation Committee of Seoul Metropolitan Council and the civic groups held a meeting and agreed to develop a movement to legislate the ordinance on pedestrians. In February 1996, Seoul hosted a forum to discuss how to create pedestrian-friendly city and the future plans to legislate the ordinance on pedestrians. In October 1996, the Seoul Metropolitan Council proposed the ordinance on pedestrian of Seoul and the ordinance was implemented in January 1997. According to the ordinance, Seoul shall establish a "Basic Plan for the Pedestrian Environment" every 5 years. The 1st basic plan for the pedestrian environment was established in 1998. In the basic plan, kinds, contents, necessary budgets and subjects of the pedestrian environment improvement projects that Seoul has to implement over the next 5 years should be presented clearly. In addition, the project related job allocation, promoting organizations, preparation of relevant regulations and standards and method to facilitate civil participation were to be included.

Creation of Car-free Streets

The 'Creation of Car-free Streets' in Seoul is one of the representative projects for pedestrian oriented traffic policies. The project to create car-free streets was designed to allocate more urban spaces to the citizens because the spaces for the pedestrians were insufficient. Seoul designated Insadong-gil, Myeongdong-gil and Gwancheoldong-gil as the car-free streets in 1997, and began to expand the areas gradually. As of 2011, there were 24 car-free streets and the total length of all the car-free streets totaled around 18km. The car-free streets were designated mainly in downtown commercial areas and residential living spaces. The car control periods and methods are different depending on the local conditions (all day operation in 9 streets, weekend operation in 14 streets and occasional operation in 1 street).

<Figure 2> Examples of Car-free Streets in Seoul



(a) Car-free Myeongdong-gil



(b) Car-free Gwancheoldong-gil (Street for the Youth)

Source: The Seoul Institute (2012)

Creation of Seoul Plaza

Before Seoul Plaza was reborn to its current form, there had been large intersections and broad drive ways in front of Seoul City Hall. The neighboring areas suffered from chronic traffic congestions. Because pedestrian crossing was allowed only through the underground passage, the accessibility of pedestrian crosswalks was low, and there was no consideration for the disabled and the elderly in the current infrastructure. As the area in front of Seoul City Hall was used as a cheering place during the 2002 World Cup, the necessity for a space for citizens to gather and communicate increased and the discussions began to convert the area in front of City Hall into a plaza in the city center. Seoul conducted a survey to examine public opinions, and responses agreeing with the plan made up 79% of the total respondents, showing positive reactions and support from the people.

Seoul created Seoul Plaza based on 4 basic directions; recovery of historic and symbolic value, reorganization of the traffic system, satisfaction of pedestrians' desires, and creation of cultural spaces. Seoul Plaza was completed on May 1st, 2004. With a total area of 13,207m², it has been used widely for various events and gatherings. Meanwhile, there were responses against the construction of Seoul Plaza with concerns regarding serious traffic congestions (accounting for 82% of the total 15% of answers opposing the new plaza). However, most experts evaluated that the traffic flow had been improved after the creation of Seoul Plaza.

<Figure 3> Before and After the Creation of Seoul Plaza



(a) Before



(b) After

Source: Home page of the Seoul City (<http://plaza.seoul.go.kr/archives/367>)

Removal of Elevated Roads and Pedestrian Overpasses

With the many projects to improve the pedestrian environment, Seoul tore down elevated roads in order to enhance the city's appearance and the aesthetic satisfaction of pedestrians. Also, Seoul demolished the overpasses which had been installed for the pedestrians to cross over the roads, and instead installed crosswalks at the same places to provide convenience to the pedestrians.

Beginning with the demolition of Tteokjeon overpass in 2002, Seoul has torn down over the past 10 years around 20 elevated roads installed on main streets. The representative overpass demolition project was to tear down the Cheonggye overpass crossing Seoul from east to west in 2003. The demolition of Cheonggye overpass was effective in improving the urban landscape and environment. In addition, the resulting traffic flow was not as bad as was originally concerned. According to some domestic studies on the demolition of overpasses, it has had positive economic effects such as improvement of traffic flow, revenue increase in neighboring commercial areas, house value increases and improvement of surrounding landscapes, supporting the appropriateness of the overpass demolition project.

Transition from the Vehicle-oriented City to the Pedestrian-friendly City

Many citizens and experts pointed out that the pedestrian overpasses installed recklessly as a part of pedestrian environment improvement projects had caused inconvenience to the mobility of handicapped pedestrians (such as children, the elderly, the disabled and stroller carriers) and had increased traffic accident rates because of jaywalking. Seoul accepted these opinions, and started the project to tear down the pedestrian overpasses and to install new pedestrian crossings instead. The pedestrian overpass demolition project was not implemented in a comprehensive form, but allowed the autonomous districts to tear down the pedestrian overpass individually when the citizens wanted it torn down and proposed its demolition through the site investigation and meetings with the related people. The number of pedestrian overpasses in Seoul was reduced from 206 in 2007 to 165 in 2013, an average of around 6 have been torn down annually.

Main Contents of the “Seoul Vision for the Pedestrian-friendly City”

In January 2013, Seoul announced the “Seoul Vision for the Pedestrian-friendly City” to pave the way for successful transition to become a city with an advanced pedestrian environment. Seoul set a goal to increase the pedestrian traffic rate from the current 16% to 20% by 2020. The “Seoul Vision for the Pedestrian-friendly City” has acted as a guideline for all pedestrian related policies.

Current Problems and Issues with the Pedestrian Environment of Seoul

Seoul made a diagnosis regarding the pedestrian environment in downtown areas before establishing the Seoul Vision for the Pedestrian-friendly City. The result was that Seoul had 4 main problems to be solved; dangers of jaywalking resulting from the lack of pedestrian crossings, roads in residential areas occupied by vehicles, around 250 pedestrian overpasses and underground passages and uneven width of walkways. Also, the pedestrian overpasses and the underground passages were built focusing on vehicles, not on the convenience for people and not in consideration of the mobility handicapped pedestrians.

10 Main Projects of the “Seoul Vision for the Pedestrian-friendly City”

Expanded Designation of the Pedestrian-only Streets

Seoul planned to expand the designation of the pedestrian-only streets and operate them in weekend or all day modes in consideration of the local conditions like pedestrian volume, functions of roads and traffic. Seoul designated Sejongno after several pilot operations as the first pedestrian-only street operated in weekend mode on the third Sunday of each month. On the streets to be designated as pedestrian-only ones like Sejongno located in the downtown area of Seoul, recycled goods sharing markets, farmers’ markets, open art theaters and cultural events offering hands-on experiences would be held. Professional MPs (Management Planners) would be hired for substantial content operation. Seoul planned to invite public participation for developing festivals and events reflecting local characteristics and to encourage the autonomous districts’ participation by supporting their design planning.

<Figure 4> Test Operation of Pedestrian-only Street in Sejongno

- ♦ Initial Implementation Date: Sep. 23rd (SUN) 2012 (occasional operation)
- ♦ Section: Gwanghwamun three-way intersection to Sejongno intersection
- ♦ Events: Recycled goods sharing markets, Farmers’ markets, etc.
- ♦ Project Results
 - No. of Participants: around 53,000 people
 - Increased social interests via media reports
 - Fourfold increase of the No. of visitors to the neighboring commercial areas and a 10% increase in revenue.



Source: Press release of the Seoul Metropolitan Government (2012)

Creation of 5 Pedestrian-friendly Areas by 2014

The pedestrian-friendly area suggested by Seoul is different from the pedestrian-only street because the former is led to the improvement of pedestrian environment such as extension of walkways, installation of safe related facilities and specialized local passages while the latter just controls the entry of vehicles with the existing street shapes maintained. The target areas of the project were Yeonseo that was the first public transportation only area in Seoul, Seongsu-dong-gil that was a history and culture tour area, Gangbyeonno with lots of pedestrians, Yeongjungno and Daehangno. The areas were expected to get the local competitiveness by integration of regional characteristics and pleasant pedestrian passages. The Seongsu-dong-gil was anticipated to be full of vital energy when the pedestrian sidewalks were renewed, the installation of pedestrian guidance signboards was expanded and the citizens gathered to walk the passage. Seoul also planned to designate pedestrian-first roads and children-only pedestrian walkways and to lower the regulated speed.

Introduction of the Pedestrian-first Roads in the Living Areas

Seoul decided to introduce the pedestrian-first road system in the living areas where the pedestrian traffic was high and the width of roads is around 10m with high traffic accident risks. The pedestrians have passing priority over vehicles in the pedestrian-first roads in the living areas. The sidewalk of the pedestrian-first road would be widened as much as possible and speed bumps, pedestrian-first signboards and roundabouts would be installed. And the speed limit of vehicles would be less than 30km/h.

Operation of the Children-only Streets

Seoul planned to expand the children-only streets gradually after analyzing the effects of pilot projects implemented in front of 10 primary schools in 2013. Once a road is designated as the children-only street, the traffic safety signs are marked on the road, more CCTV are installed and the entry of vehicles is controlled in the road in front of the schools during the time to and from school. Also, 'Amazone' meaning the space where the children can be romping around would be operated at 7 model areas in 5 districts by 2014. Seoul dispatched experts to the sites of 19 autonomous districts that had expressed their wishes the operation of Amazone and selected 5 districts. The pilot projects were implemented in 3 districts in 2013 and in 2 districts in 2014. The goals of Amazone operation were to prevent various crimes as well as to secure the pedestrian traffic safety of children through placement of traffic safety instructors, designation of no-smoking areas, operation of volunteer patrol groups, unification of crowded vehicles of the private educational institutes, expansion of CCTV installation and transition of two-way traffic to one-way traffic.

Strengthened Speed Limit in the Backside Roads of the Living Areas

Seoul decided to strengthen the speed limit of vehicles in the backside roads of the living areas in order to prevent the traffic accidents in the residential areas. Seoul had conference with the National Police Agency to adjust the speed limits from 40km/h to 30km/h in the double lane road and from 60km/h to 50km/h in the four-lane road. The adjusted speed limit was applied first for 10 roads in the first half of 2013. Seoul also facilitated the adjustment of speed limit from 50km/h to 30km/h in the main roads in downtown including Cheonggyecheon and planned to expand such speed limit to the entire Seoul area.

Overall Improvement of the Pedestrian Environment for the Mobility Handicapped

Seoul determined to improve the pedestrian environment to help the mobility handicapped persons go anywhere by themselves in Seoul. It planned to expand the installation of elevators (from 794 to 826 units) and escalators (from 1,779 to 1,852 units), 2,678 units in total at the subway stations and to provide the 'voice recognition service for destination information' for the blind at 400 inter-city bus stations. Seoul also planned to improve the functions of acoustic signal generating device and to expand its installation by 1,000 units every year. In order to ensure that the pedestrian and traffic safety facilities give real help to the mobility handicapped, Seoul would introduce a system to evaluate and validate whether the facilities of bus stations and subways, roads and pedestrian facilities (walkway, crossing, traffic light, etc.) are suitable for the criteria of pedestrian environment for the mobility handicapped.

Extension of Green Signal Time of the Traffic Lights Installed at the Pedestrian Crossings

Seoul planned to extend the green signal time from the existing 1.0m/s to 0.8m/s in consideration of walking speed of the mobility handicapped such as children and the elderly. The main target places would be the area densely populated with the mobility handicapped such as neighboring areas of Tapgol Park and Boramae Park where many elderly persons come and go and the Children's Grand Park with heavy traffic of children.

Installation of Crosswalks at All Intersections in Downtown

Seoul planned to install the crosswalks at all intersections in the downtown area step by step. The plan was designed to remove the inconvenience of taking a long way around because of no crosswalk and to guarantee the right of mobility handicapped persons who have difficulties in using the pedestrian overpasses. The crosswalks would be installed at most of the intersections including Gwanghwamun, Anguk-dong, Heunginjimun (Gate) and the City Hall in downtown to all directions and at the place where the underground passages and pedestrian overpasses had been installed. Seoul would select the type of crosswalks and install them after checking the pedestrian and vehicle traffic of each intersection and road functions.

Spread of Walking Culture through the ‘Seoul Walkathon’ as a Pedestrian Festival and the Creation of ‘Downtown Pedestrian Roads’ Connecting the Tourist Attractions

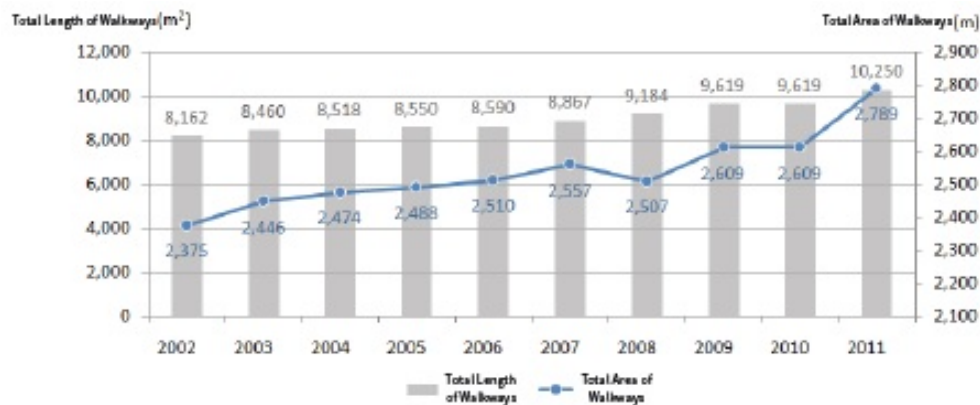
Seoul planned to held the Seoul walkathon as a pedestrian festival to walk the pedestrian-friendly Seoul to spread the walking culture and to develop the downtown pedestrian roads (promenade) connecting palaces, shopping areas, historical & cultural spaces in Seoul downtown in parallel with the application of Seoul Fortress Wall for the UNESCO registration. Seoul would designate a day of April or September as a ‘Day for Pedestrians and Bikes’ and select a section with big PR effects and symbolic meaning that the pedestrians occupy the downtown area usually filled with the vehicles to hold the event. The downtown pedestrian roads would be made with the Seoul Plaza as the center and signboards for the pedestrians, signpost showing the distance and time required and the pedestrian road guide lines.

Achievement of Pedestrian Environment Improvement Policy of Seoul

Status of Installed Pedestrian Facilities of Seoul and the Achievement

In order to improve the pedestrian environment, Seoul has installed walkways, crosswalks, pedestrian-only streets and various facilities continuously. The total length of walkways in Seoul has steadily increased from 2,375km in 2002 to 2,789km in 2011. (Refer to the <Figure 5>).

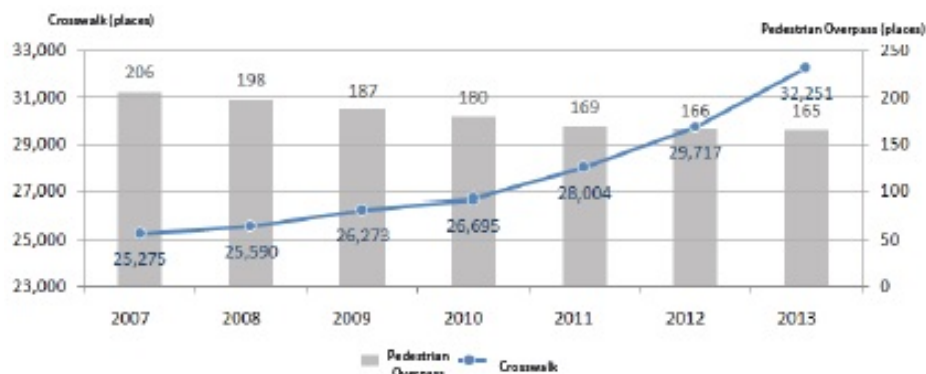
<Figure 5> Change of Total Length of Walkways and Their Areas



Source: The Seoul Institute (2013)

The number of crosswalks has also increase from 25,275 in 2007 to 32,251 in 2013. Especially for one year after the “Seoul Vision for the Pedestrian-friendly City” had been announced, 2,534 crosswalks were installed. As of 2011, there were 3.6 crosswalks per 1km of road in length, meaning there was 1 crosswalk around every 300m. 32% of the entire crosswalks had traffic lights together and 7,938 crosswalks had acoustic signal generation devices installed.

<Figure 6> Change of No. of Crosswalks in Seoul



Source: Seoul Statistics

Seoul has designated and expanded the children and senior protection zones. As of 2012, the number of children protection zones in operation was 1,598 places and the number of senior protection zones in operation was 48. In case of children protection zone, around 55.1% of the target facilities (primary schools, kindergartens, private educational institutes, etc.) were designated.

<Table 1> Status of Designated Children Protection Areas and Improvement Projects of Seoul (As of 2012)

Classification	Sum	Primary School	Kindergarten	Daycare Center	Special Education School	Private Educational Institute
No. of Target Facilities	2,899	594	866	374	45	1,020
No. of Designated Facilities	1,598	593	652	324	29	

Source: Press release of the Seoul Metropolitan Government (2012)

<Table 2> Status of Designated Senior Protection Areas and Improvement Projects of Seoul (As of 2012)

Classification	Sum	Housing Welfare	Medical Welfare	Leisure Welfare	City Park	Lifetime Sports Facility
No. of Target Facilities	6,362	30	432	3,545	1,966	389
No. of Designated Facilities	48	3	8	37	-	-

Source: Press release of the Seoul Metropolitan Government (2012)

Increased Pedestrian Traffic of Seoul

As a result of the continuous promotion of pedestrian environment improvement projects of Seoul, the pedestrian traffic of Seoul showed a growing trend. Seoul has taken censuses of the floating population on the main streets of entire Seoul area since 2009. According to the census data, the floating population of Seoul on the weekly average pedestrian traffic basis was increased by 4.3% from 5,165 persons/14 hours in 2009 to 5,384 persons/14 hours in 2012. By days of the week, the largest increase of pedestrian traffic was made on Friday, changing from 5,411 persons/14 hours in 2009 to 5,680 persons/14 hours in 2012. The citizens used to enjoy leisure activities in the afternoon time of Friday. Taken the fact that the largest increase of pedestrian traffic was made on Friday, it seems that the pedestrian environment improved by Seoul may facilitate the walking activities of the citizens more.

<Table 3> Change of the Floating Population of Seoul in 2009 and 2012

Unit : person/14hr

Classification	Mon.	Tue.	Wed.	Fri.	Sat.	Weekday Average	Weekly Average
2012	5,352	5,371	5,393	5,680	5,126	5,449	5,384
2009	5,101	5,241	5,156	5,411	4,913	5,227	5,165
Difference (2012-2009)	251	130	237	269	213	222	219

Source: The Seoul Metropolitan Government (2013)

Limits and Implications

Low-carbon green growth, environment-friendly industry, pedestrian and public transportation has become the common values of the current world. In such global trends, the creation of pedestrian-friendly city has attracted attention as a core project. But the Seoul's projects to develop Seoul as a pedestrian-friendly city has been somewhat lacking of connectivity among them so far because the project target areas tended to be selected in administrative expediency and the projects were implemented individually. As a result, the continuity of the pedestrian traffic flow could not be ensured satisfactorily. Thus, it is recommended for the future pedestrian projects of Seoul to consider the connectivity among the planning projects first and then implement them gradually to create the pedestrian-friendly city.

However, the pleasant and safe pedestrian-friendly city that Seoul planned to create cannot be realized just with the projects to improve the pedestrian environment. In spite of Seoul's much endeavor, it is true that moving in using cars is relatively easier than moving in using public transportation or by walking in the current traffic environment of Seoul. Therefore, it is necessary to improve the pedestrian related policies and public transportation services currently in progress and to implement the parking and traffic demand management policies in parallel in various fields in order to create better pedestrian-friendly city.

The pedestrian policies of Seoul have been promoted individually and uniformly and concentrated on the improvement of pedestrian walkways rather than the meaning of urban space. The policies on the pedestrian-friendly city should focus on the pedestrian walkway as a part of urban space and make the space alive. Also, it is necessary to manage the land use and landscape surrounding the streets and create pedestrian space reflecting the local characteristics beyond the uniformed improvement of pedestrian walkways. If Seoul offers the residents the chances to participate directly or indirectly in the planning and implementation stages of the projects, it would be beneficial to create the pedestrian space correctly reflecting the local features.

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