

**INTEGRATED CORRIDOR MANAGEMENT  
FOR DHAKA CITY**

**BY**

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This Report Presented in Partial Fulfillment of the Requirements for the  
Degree of Bachelor of Science in Computer Science and Engineering

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**DAFFODIL INTERNATIONAL UNIVERSITY**

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**NOVEMBER 2018**

## **APPROVAL**

This Project/internship titled “**Integrated Corridor Management System for Dhaka City**”, submitted by KHONDOKER TANVIR AHMED, ID No: 151-15-5336 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 11.12.2018.

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## **DECLARATION**

We hereby declare that, this research titled “**Integrated Corridor Management System for Dhaka City**”, has been done by me under the supervision of **Israt Ferdous, lecturer, Department of CSE** Daffodil International University. I also declare that neither this research nor any part of this research has been submitted elsewhere for award of any degree or diploma.

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## ACKNOWLEDGEMENT

First I express my heartiest thanks and gratefulness to almighty God for His divine blessing makes me possible to complete the final year research successfully.

I really grateful and wish my profound indebtedness to **Israt Ferdous, Lecturer**, Department of CSE, Daffodil International University, Dhaka to be my supervisor in this field to carry out this research. Her endless scholarly guidance, continual encouragement, patience, constant and energetic supervision, valuable advice, constructive criticism, reading many inferior draft and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest gratitude to **Prof. Dr. Syed Akhter Hossain Head, Department of CSE**, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

I would like to thank my entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, I must acknowledge with due respect the constant support and patients of our parents.

## **ABSTRACT**

This research is based on survey of different Integrated Corridor Management methodology for Dhaka City. This is created for the purpose of smart city by using intelligent transportation system. Now a days every city trying to have a great transportation systems as it is one of the core component of a smart city. To make Dhaka city as a smart city this research has been done. Among many important part of ITS, Integrated Corridor Management is one of them. This research used a lot of data from various sources to analysis and to get a better model. I used XML, InfoWorks, Transmodeler software for simulate and implement this research. In this research, decision based model has been proposed for various types of road in Dhaka City.

This research used past and present data of transportation system of Dhaka city for preprocessing the knowledge base of the model. This research is created to find out some optimal solution to get a smart corridor.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

State of art technology is next step in taking corridor management to the future. And it is being delivered through integrated corridor management demonstration project known as ICM. As one of two major freeways that connect and serve commuters between Dhaka City, and people traveling one place to another, Corridors are one of the busiest section of freeway in the region. With the opening of ICM in, and continued construction of transit station and direct access ramps, considerable efforts and financial investment in infrastructure improved mobility at the corridor. As traffic increases and the Dhaka association of governments continually works with its regional partners to fund innovative ways to maximize transportation resources and assets while minimizing financial impact. Integrated corridor management demonstration project will deploy new technology to improve movement of commuters, goods and services. ICM brings all together all of the state and local agencies responsible for managing traffic flow and the commuters experience and its feeder system of arterial streets and mass transportation. San Diego is one of the first region in the USA to implement this sophisticated system, pulling together agencies, technologies, and modes of transportation into a comprehensive transportation tool box. The ICM project provides a framework and platform for these partners to join forces and resources in unprecedented ways to make better use of what we have. Integrated corridor management leverage the regions existing and impressive investment in traffic management, such as the innovative express lanes system and its commuter connections, to produce a better, faster, smarter commuter experience. The ICM system collects information from sensors that measure traffic flow from corridor. This real time data is monitored by operators in the traffic management center who then adjust traffic signals and ramp meters. ICM allows traffic managers to collectively gather, analyze and share traffic incidents as the occur using ultra fast computing system and advanced logistical algorithms. That information is then used to not only implement remedies to immediate congestion to prevent it. The ICM system

continuously analyze overall traffic flow and adjust ramp meters to ensure the smoothest transition on and off the freeway, and alerts drivers of condition such as road debris and problems ahead of time. In addition, ICM operator to share traffic condition via website, radio, and the phone service so drivers on the corridor can make the best travel choice. The integrated corridor management project is the beginning of a new journey. With the ICM project added to its toolbox to the freeway of the future, to the future.

## **1.2 Motivation**

My research is for reduce traffic jam of Dhaka city. The developed cities are using ICM for their smart transport system. It helps to reduce travel time, fuel consumption, corridor mobility. A free way road makes a traffic system more effective for a smart city. Dhaka city have some problems in traffic system. There are a lots of traffic jam and accidents is occurred every day. So its badly needed a smart transportation system which have a secured and time efficient ability. The main problems of the transportation system of Dhaka city is, it has a lots of messy corridor. As a result, this city suffers from terrible traffic jam. So ICM can be the solution for these problems. That's why this research would be able to make some positive change in the transportation system on Dhaka City. All this reason made me motivate for doing this research.

### 1.3 Objective

Objective of “Integrated Corridor Management For Dhaka City” Research is given below

- Collecting data from BRTA
- Collecting data from ministry of road transport
- Prepare a database for simulation
- Analysis various ICM model
- Create a methodology
- Implement this methodology
- Find the outcomes of the simulation
- Find the benefits of ICM
- Cost

Now we will discuss the objective in briefly

#### 1.3.1 Collecting data from BRTA

In this research data collected from BRTA and its websites. As we work with the traffic system of Dhaka City data is needed for further work in this research. The data is consisting of how much traffic emitted in a specific corridor. The incident of the corridor in early Year etc.

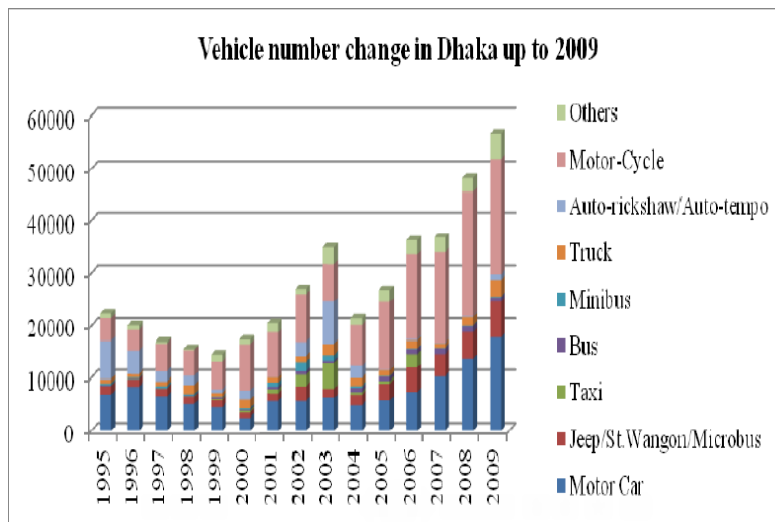


Fig 1.1: Vehicle change graph.

### 1.3.2 Collecting data from ministry of road transport

Number of vehicles, types of corridors, accidents, various types of incidents on roads etc data was collected from ministry of road transport.

Table 1.1: Number of accident in Dhaka City.

Year	Number of accidents		Number of persons		Accident severity*
	Total	Fatal	Killed	Injured	
2002	40,7497	73,650 (18.1)	84,674	4,08,711	20.8
2003	406726	73,589 (18.1)	85,998	4,35,122	21.1
2004	429910	79,357 (18.5)	92,618	4,64,521	21.5
2005	439255	83,491 (19.0)	94,968	4,65,282	21.6
2006	460920	93,917 (20.4)	1,05,749	4,96,481	22.9
2007	479216	1,01,161 (21.1)	1,14,444	5,13,340	23.9
2008	484704	1,06,591 (22.0)	1,19,860	5,23,193	24.7
2009	486384	1,10,993 (22.8)	1,25,660	5,15,458	25.8
2010	499628	1,19,558 (23.9)	1,34,513	5,27,512	26.9
2011(P)	497686	1,21,618 (24.4)	1,42,485	5,11,394	28.6

P: Provisional, Source: Information supplied by States/UTs (Police Departments), Figures within parentheses indicate share of fatal accidents to total accidents \*Accident Severity: No. of Persons killed per 100 accidents

### 1.3.3 Analysis various ICM model

1. I-5 corridor management
2. I-15 corridor management
3. I-75 corridor management
4. I-80 corridor management
5. I-130 corridor management

### 1.3.4 Prepare a database for simulation

This database provides detailed information about all types of corridor. The corridor category and its information is simulated in this research.

### 1.3.5 Create a methodology

In this research the Kanban method is used to implement. The Kanban method is means to design, manage and improve flow systems for knowledge work. The method also allows organizations to start with their existing workflow and drive evolutionary change.

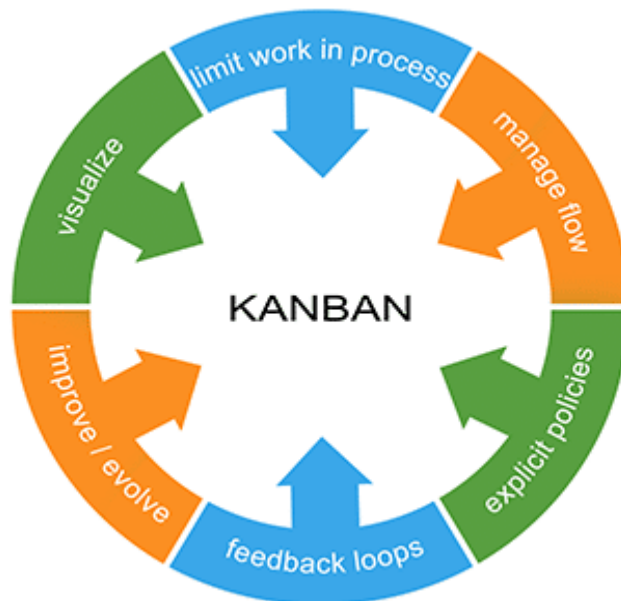


Fig 1.2: kanban Method diagram.

### 1.3.6 Find the outcomes of the simulation

ARENA, Transmodeler, Infoworks etc work for simulation in this research. After collecting data, the optimal solution is need to find out on validation of the methodology. For that reason, there should be the model. Through this process wanted outcomes are get. Then it will be easy to compare with other model and can get idea of the feasibility of this model.

### 1.3.7 Cost

Cost efficiency is calculated for the models in this research. As this kind of research is only for mega projects, so it's very important to calculate cost. It's can make a project more valuable if it is more cost efficient.

## 1.4 Research Questions

- **What I am thinking**

Dhaka city is a traffic busy city. Traffic system of Dhaka city is getting worse day by day. So it is dire need to apply some solution to solve the problem. The reason behind this problem is not using the corridor smartly. This problem can be solved by using the free corridor of Dhaka city smartly. That is what I was thinking about to make Dhaka city traffic jam free and a smart city by using the free corridor.

- **What is wanted to do**

Through this research I wanted to create some model and some methodologies for integrated corridor management system. Which helps to make corridor of Dhaka city free and smart. By simulating those models and methodologies I wanted to get a optimal corridor management system for Dhaka city

- **How it helps us**

This research helps us to reduce traffic jam, unwanted accidents, also give us road that is free from traffic jam. Integrated corridor management system allows us to travel smartly and also safely. Through this research we get all the information about free road and corridor so after that we can use these corridors effectively. It saves our valuable time. It will also make our city a developed and smart city which is the main agenda of this research.



### **1.5 Expected Outcome**

There are five types of expected outcomes in my "Integrated Corridor Management For Dhaka City " system.

- Corridor mobility.
- Reliability of travel time.
- Finding freeway.
- Reduce accident.
- Fuel consumption.

### **1.6 Report Layout**

I have created the whole research into five chapters. Lesson of four chapters is concise in the layout. In first chapter I discussed about the introduction and motivation of my "Integrated Corridor Management For Dhaka City" Research. Then I viewed about my research objectives and expected outcome. The second chapter studied main discussions about scope of problems and challenges. In the third chapter in my research, I focused on my research methodology and data collection from the users. I discussed here what kind of software and service will be used in my research. I also notified here which types of model and design is required. In chapter four I discuss the experimental result and analysis of the research. It is exposed to my project details diagram, and new through applied details. I have performed testing and compared with other existing models. Within chapter five I have done the summary, conclusion, implementation way of interaction and testing of the research work.

## **CHAPTER 2**

### **BACKGROUND**

#### **2.1 Introduction**

For findings problems of "Integrated Corridor Management For Dhaka City" research, I have collected data from the BRTA and tried to gain knowledge about roads of Dhaka City from Ministry of Road Transports. My research includes accident information, accident causes, weather information, adviser message for solution. I have completed the research keeping in mind that the cost effectiveness for Dhaka City. The main goal of my research is to ensure the safety, reliability, time consumption of the people of Dhaka City. So that people can enjoy a smart city. And I create my research "Integrated Corridor Management For Dhaka City" system effectively.

#### **2.2 Related Works**

There have been no related research or model is proposed to solve the problem of "Corridor of Dhaka City". This research with the goal of make an intelligent transportation system for Dhaka City and develop the city as smart city is trying to find out various way to enjoy a better transportation system. Some research is done on ICM for various cities in the world. there is no research on Dhaka City Corridor management. For example, Bangladesh Road Transport Authority (BRTA) works only for some large project. Such as

- Gazipur Chawrasta Flyover
- Rapid Bus Transit
- Dhaka Elevated Expressway

Without this there are also some mega research project on some cities. Such as

- I-15 corridor on san Diago, California
- I-80 corridor on Bay Area
- I-394 corridor on Minneeapolis
- I-75 corridor in Dallas, Texas

Table 2.1: Difference with other research

<b>Research</b>	<b>Other</b>
The research is on Dhaka City where there are some odd corridors.	Other research have a lots of scope to make a modeled corridor.
Cost effectiveness is must in the research.	Cost effectiveness is a minor subject.
This research is modeled for make Dhaka city smart.	There is no research on ICM of Dhaka city.
User friendly model is implemented here.	Not much more user friendly.
Integrated methodology is built.	Have a specific methodology.

## 2.3 Scope of the problem

### 2.3.1 Various types of Corridor

In this research there are scopes of having corridor problem. Because in Dhaka city there are different types of corridor like two by two-way corridor and four by two-way corridor. So it is quite challenging to merge them to create a free way for the city.

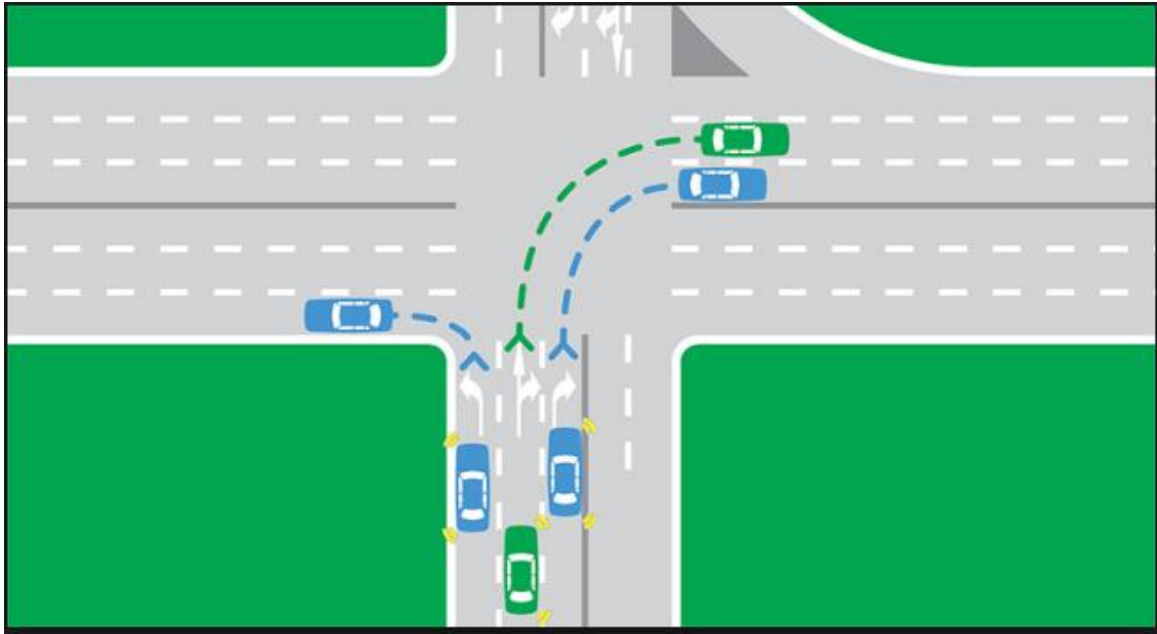


Fig 2.1: Multimodal Corridor.

### 2.3.2 Variety in Transport

In Bangladesh we know that there are various kinds of vehicles and transport like CNG, car, bus, truck, motor cycle etc. So they have variety on speeds and movements. Cars have great speed where buses are comparatively slow. So in corridor management system it should be keep in mind that different lanes are need to maintained for each different vehicle.

### 2.3.3 Cost Effectiveness

As per we know that Dhaka city is not prepared for mega project to implement because of its low capacity of cost to maintain this types of projects. So a cost effective corridor management model need to build up for Dhaka city. Otherwise it will be challenging to implement this kinds of corridor projects.

### **2.3.4 Scope of Modify**

There are scopes of modification. In future if any kind of changes modification or update is needed than there will be scope to modify the proposed methodology and suggestions. If in future, I find better way of data collection and idea then it will be easy thing to modify.

### **2.3.5 Weather Changes**

Weather change is one of the massive scope of create problems in corridor management system. In different weather Dhaka cities roads and corridors act differently. Such as in rainy situation some corridors of Dhaka city become useless. So it can be creating problem to provide a free way in all over week days.

### **2.3.6 Unwanted Incident**

Recently some ICM systems face problems due to unwanted incidents. An accident occurs huge traffic jam in a corridor when it has a heavy emission of traffic for face this kind of challenges it is hard to provide a methodology because an incident is always unpredictable.

## **2.4 Challenges**

- To collect data.
- To find out algorithm for processing Data.
- Ensure optimal methodology for the model.
- Ensure that the model is better.
- Ensure that simulation result is accurate.
- Create more models to compare and get optimal one.
- Compare with Ideal Model.
- Make decision tree.

# CHAPTER 3

## RESEARCH METHODOLOGY & MODEL

### 3.1 Introduction

Here used some art technology for express methodology of the research. Through some diagram the methodology is viewed here. The Kanban method is like a flow of work.

Here a diagram of this methodology:

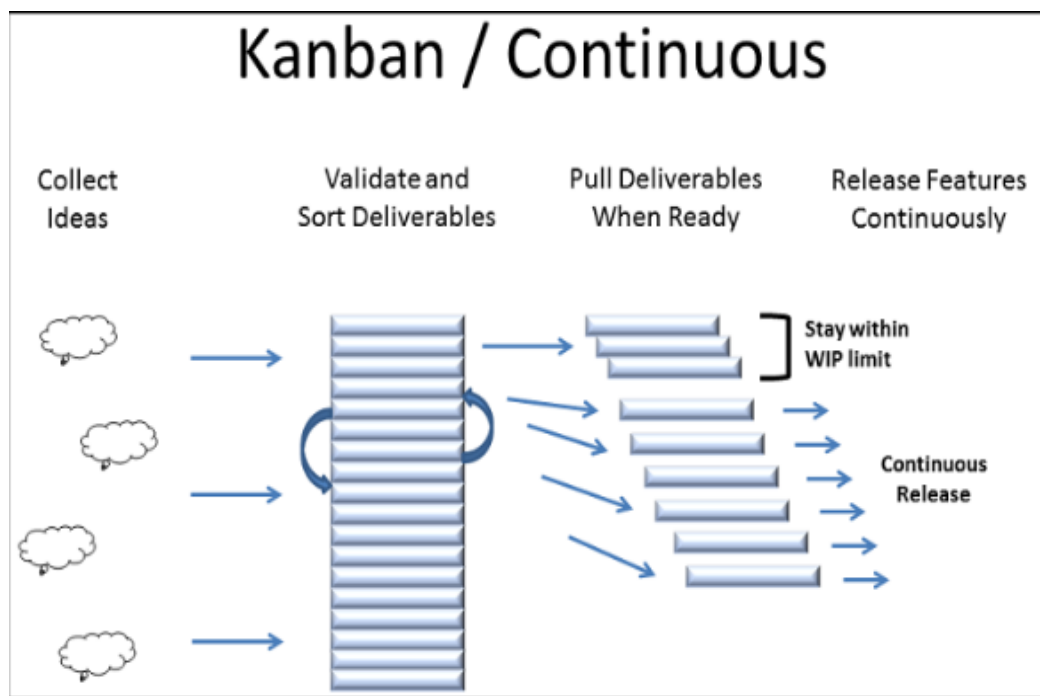


Fig 3.1 : Picture of Kanban Method.

### **3.2 RESEARCH MODEL:**

In this research the I-75, I-394, I-15 model is chosen. From the analysis of challenge and scope of problem this model is taken for implementation.

Here, three pioneer sites were selected for implementation of ICM of Dhaka City.

- I-75 corridor management on Airport Road, Farmgate.
- I-394 corridor management on Gabtoli, Gulistan.
- I-15 corridor management on Jatrabari, Kuril.

#### **I-75 corridor**



Fig 3.2 : Picture Of I-75 Corridor.

**I-394 corridor**



Fig 3.3 : Picture Of I-394 Corridor.

**I-15 corridor**



Fig 3.4 : Picture Of I-15 Corridor.



### **3.3 Research Subjects**

- Various types of corridor
- Different types of vehicles
- Variety of roadway
- Ramp meter analysis
- Used models in other cities
- Accident analysis
- Criteria of incidents
- Weather reports
- Traffic Emission rate in weak days
- Cost of current running projects

### **3.4 Research Instruments**

- People
  1. Corridor Manager
  2. Roadway Operators
  3. TMC Operators
  4. Travelers
  
- Organization
  1. BRTA
  2. Metro
  3. Cities
  4. Transit Agencies
  
- Software
  1. Models
  2. Data Hub

3. Decision Support
4. Communication Networks

### 3.5 Data Collection Procedure

Here, in this research I used both primary and secondary data collection procedure.

- Primary Data Collection
  1. Interview: Traveler, Agency.
  2. Questionnaire: Traffic Police, Driver.
- Secondary Data Collection
  1. Internal: Various research paper, 4c maps.
  2. External: BRTA websites, Other traffic websites.

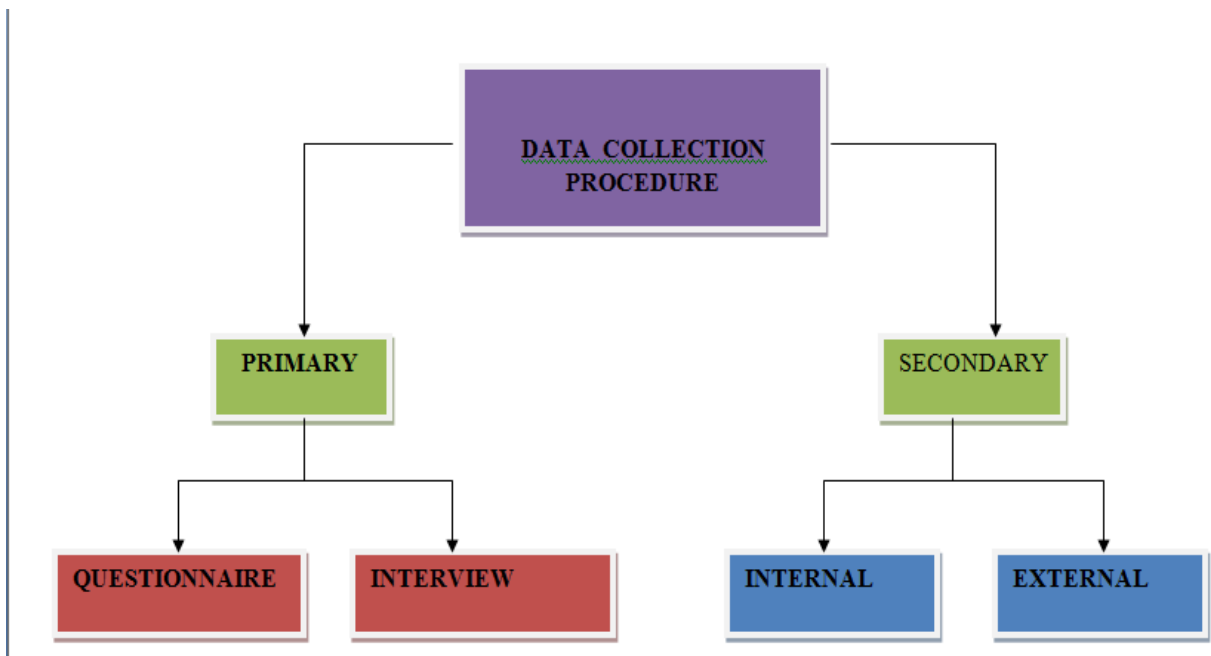


Fig: 3.5 Data Collection Procedure

### 3.6 Static Analysis

For analysis I am taking some model in this research. The analysis consist of three parts on its whole life cycle.

- Archived Data
- Modeling and Simulation
- Performance Measurement

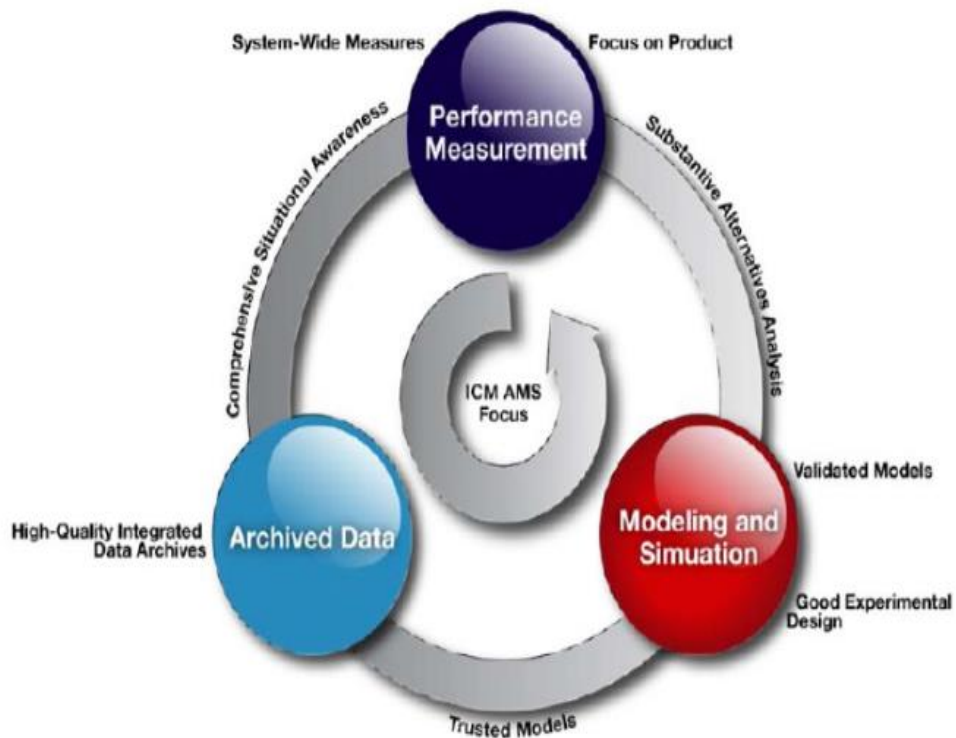
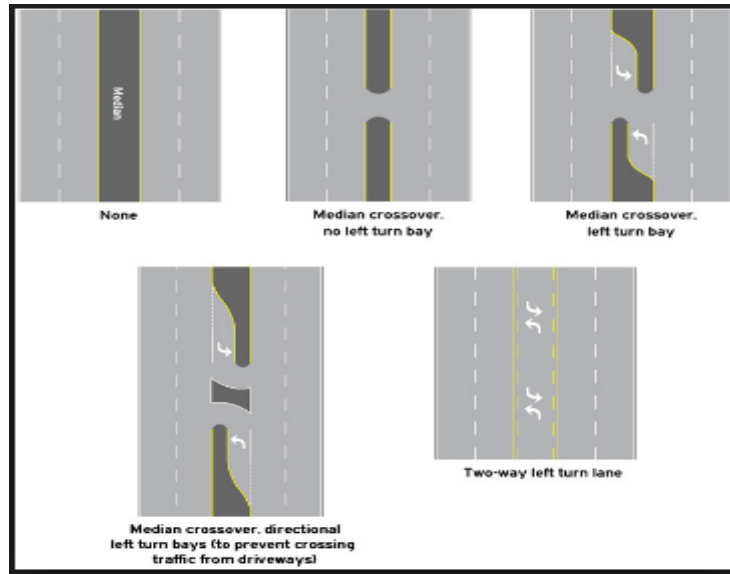


Fig: 3.6 Static Analysis

### 3.7 Findings from The Analysis

- Four way Corridors transferred in two ways: Four-way corridor is the main cause of traffic jam in Dhaka city. This types of corridor is a obstacle for getting a freeway road.



3.7: Various Types of Corridor

- Ramp meter management: Ramp meter management can help to get a smart corridor. It provides the current condition result to driver.



3.8: Ramp Meter System Of Corridor.

- Emergency Corridor Points Detection: From data analysis I find out that all the corridor is not have a same flow of transports in all the time. Some corridor has heavy emission on some specific weekdays. So this corridor is need to have a extra importance on those days.
- Moveable Parking lots: As a corridor is not have same emission so moveable parking lots help to get a free way.
- Weather Detection and Situation handling tools: Sometimes it can be see that causes of rough weather some corridors is being unusable. On that situation some strong management is help to being corridor free by using other corridor. It needs some strong detection tools.
- Accident Tackled Corridor: On some unwanted accident corridor need to be free anyway. Otherwise it would be the causes of a terrible traffic jam. For this purpose, lane maintain system is used.
- Unwanted Incident: For any kind of unwanted incident there are some corridor management system is used. Like VIP movement, Load shading, etc.

All this thinks were kept in mind when the model is built and simulate

### **3.8 Implement requirements**

I used Matlab, Areana, Transmodeler to implement this project. To implement other things like maps I used Infoworks. I have already discussed above which all the tools are used to work in our project.

Minimum Software Requirements for our application

Windows XP or higher operating System, Advance editor, Apache Tomcat Server

## CHAPTER 4

### EXPERIMENTAL RESULT AND DISCUSSION

#### 4.1 Introduction

In this research I followed some steps for implementation. Those steps are shown below with a diagram:

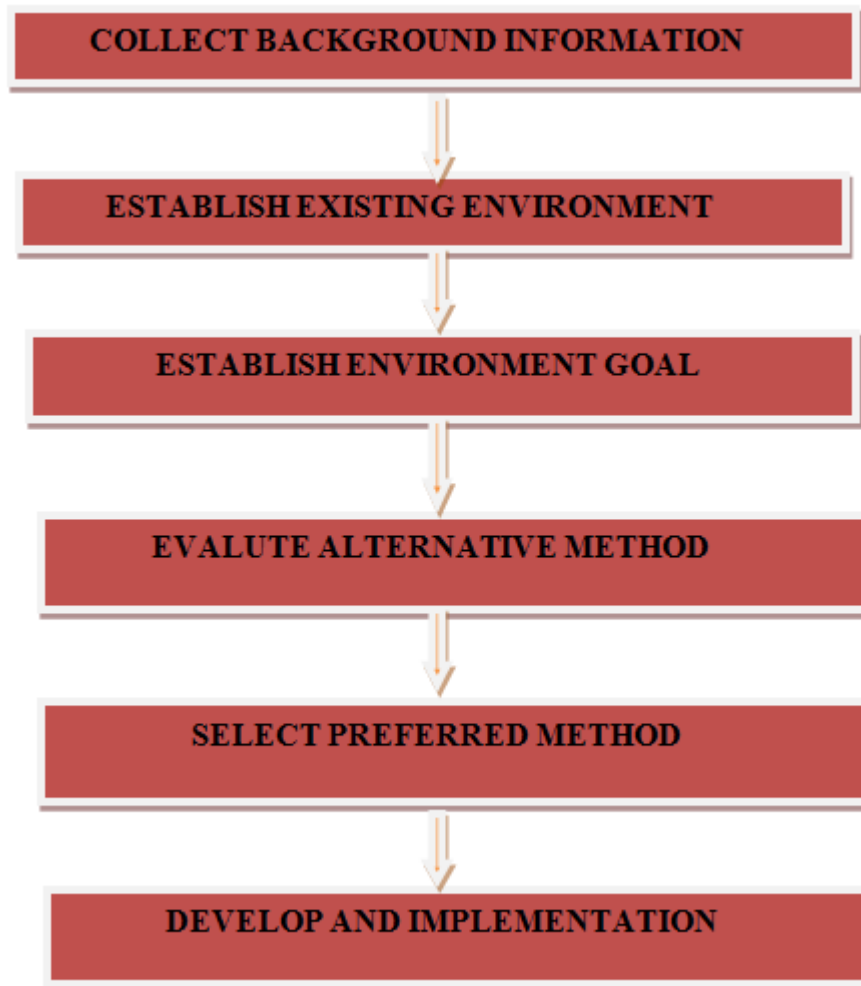


Fig 4.1: Diagram of Implementation Procedure.

For getting experimental result there is used some geographical scope in traffic analysis tools. This geographical scope helps to find out idea of corridors through art technologies. This tool has three level scope to show.

Macro-level

Meso-level

Micro-level



4.2: Geographical Model of Corridor

Here, three pioneer sites were selected for implementation of ICM of Dhaka City.

- I-75 corridor management on Airport Road, Farmgate.
- I-394 corridor management on Gabtoli, Gulistan.
- I-15 corridor management on Jatrabari, Kuril

## 4.2 Experimental result

Table 4.1 Corridor model validation and Calibration criteria for the ICM

Validation Criteria and Measures	Acceptance Targets
<p>Travel times within 15%</p> <p>Individual Linkup Speeds: Visually Admissible Speed Flow Relationship.</p> <p>Visual Audits Bottlenecks: Visually Acceptable Queuing.</p> <p>Times of flow</p>	<p>Travel times within 75%</p> <p>Analyst's satisfaction</p> <p>Analyst's satisfaction</p> <p>At least 85% time</p>

[4]



### 4.3 Result summary

Table 4.2 ICM method and Model summary

Method & Model	I-75 on Airport Road	I-394 Gabtoli	I-15 Jatrabari
<ul style="list-style-type: none"> <li>• Four way Corridors transferred in two ways.</li> </ul>	Major	Major	Minor
<ul style="list-style-type: none"> <li>• Ramp meter management.</li> </ul>	Minor	Major	Major
<ul style="list-style-type: none"> <li>• Emergency Corridor Points Detection</li> </ul>	Major	Minor	Minor
<ul style="list-style-type: none"> <li>• Moveable Parking lots</li> </ul>	Major	Major	Major
<ul style="list-style-type: none"> <li>• Accident Tackled Corridor</li> </ul>	Need	Need	Need
<ul style="list-style-type: none"> <li>• Unwanted Incident</li> </ul>	Occurred	Occurred	Occurred

[7]

#### 4.4 Descriptive Analysis

From the above result and summary table show the core analysis of the research. On the basis of the analysis the methodology is created.

Total ICM system is divided into four parts.

- Data of Current state of a corridor
- Knowledge gathered from past information
- Incident management
- Decision making

#### Current Data State Diagram:

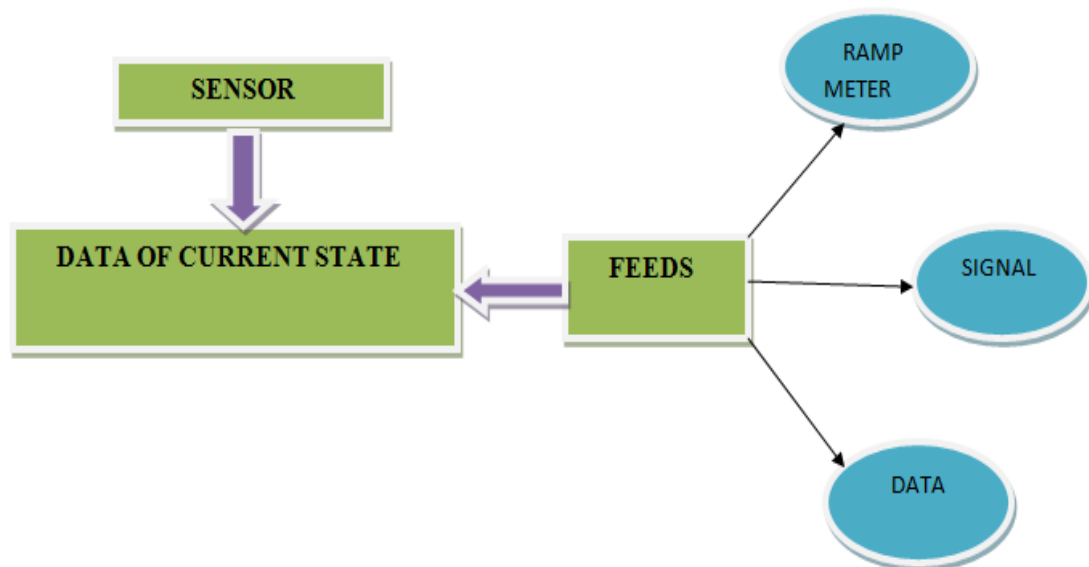
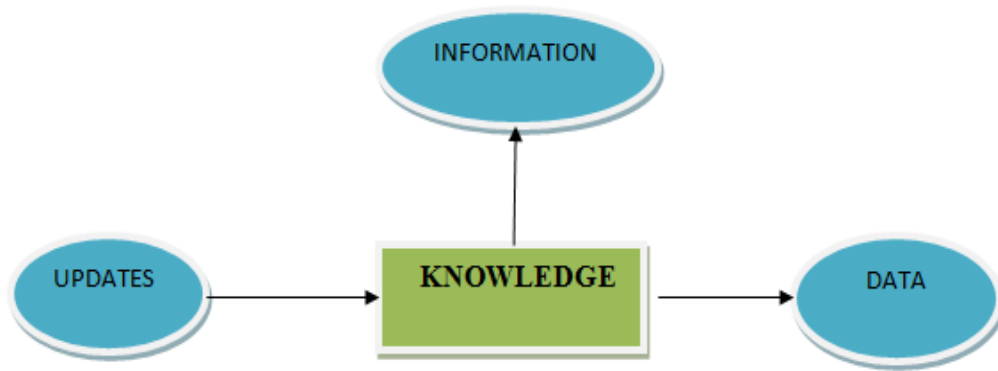


Fig 4.3 Data State Diagram

**Knowledge management diagram:**



**Data flow diagram:**

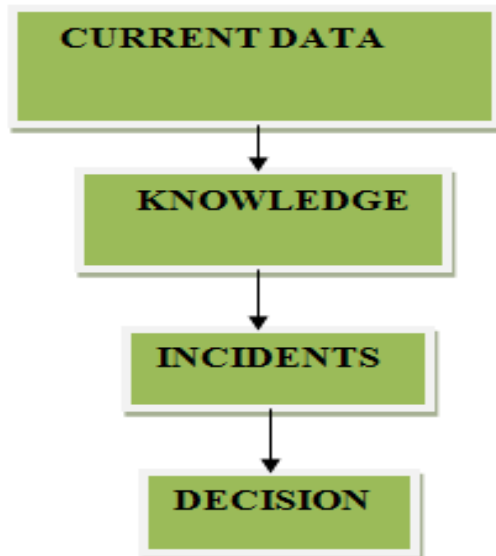


Fig 4.4 Data flow diagram

#### 4.5 The Over All System Of ICM.

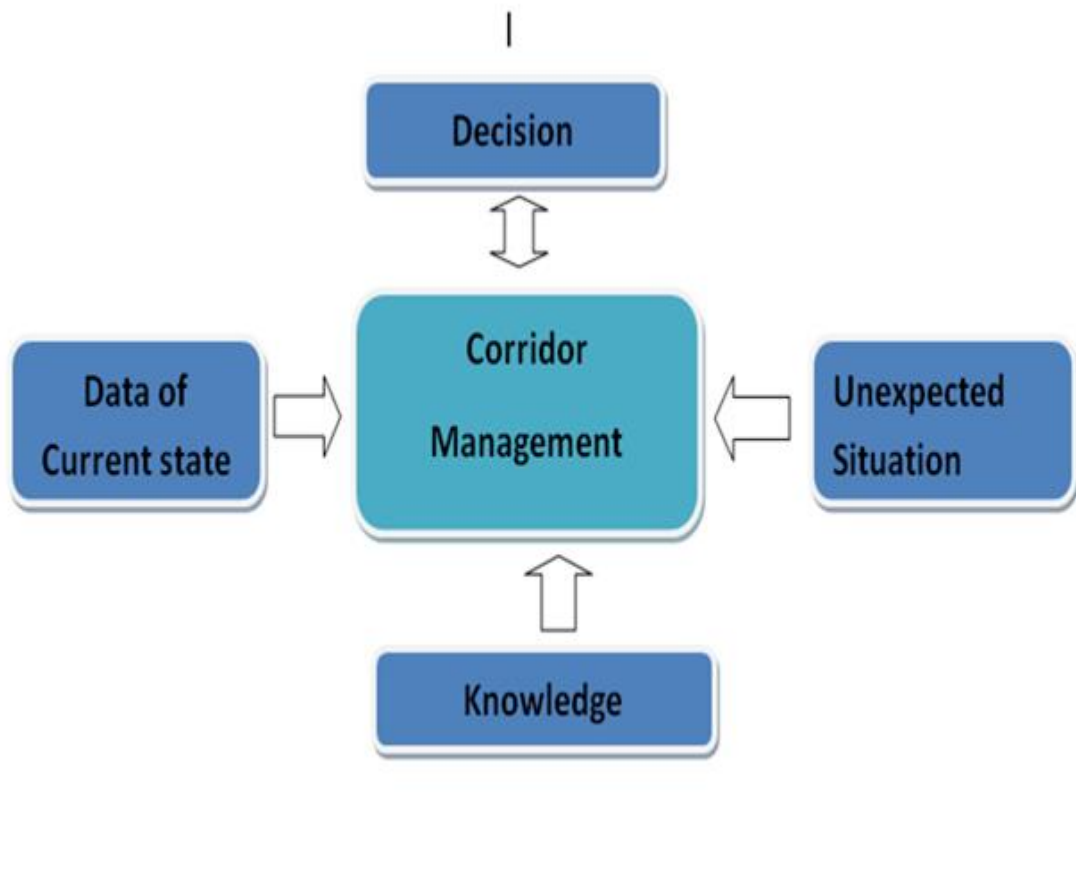


Fig 4.5: Diagram of Overall Management.

## **CHAPTER 5**

### **SUMMARY, CONCLUSION, RECOMONDATION AND IMPLICATION FOR FUTURE RESEARCH**

#### **5.1 Summary of study**

The research “Integrated Corridor Management For Dhaka City” is done for the purpose of management of corridors at Dhaka city. As ICM is related with intelligent transportation systems so the study is all about to improve the transportation system of Dhaka city better. The main motivation of the study is to get free ways smart transportation system at the corridor of Dhaka city. In this study the there are three methodology is used for build up model. Different model is created in this study and choose the optimal models only. During the study the cost efficiency was also considered. Corridor model validation and calibration was checked in the study. The study of “Integrated Corridor Management For Dhaka City” finds out the scopes of problems which helps further research and implementing any model. Related works was discussed in this research. Challenges of corridor management of Dhaka city was analyzed in this research. Not only the integrated corridor management is studied here but also smart city, intelligent transportation systems is also studied.

#### **5.2 Conclusion**

The Integrated Corridor Management Of Dhaka City is developed to manage the corridors. Dhaka city have a lot of traffic jam related problem and only this problem hampering the prosperity of the country and undeveloped roads are also liable for accidents and other problems. There are many roads and corridor in Dhaka city which are not being used smartly. If these roads can be used smartly and technically this kind of traffic problem will be solved very easily. In Dhaka city there are also vehicle problems. From this research there are solution for solving all these problem and also have

methodology and model to make this city smart city. The study is a total management system of roads and corridors.

### **5.3 Recommendation**

1. It is suggested that for future research a proportionate random sample is use to compare several corridors
  2. This research is needed to be future investigate
  3. Qualitative investigators must conduct research regarding transportation motivatio
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## REFERENCES

- [1] Cronin, Brian; Mortensen, Steve; Dale. Institute; Washington Vol. 78, Iss. 5, (May 2008): 40-45.
- [2] Stream corridor management in the Pacific Northwest: I. Determination of stream-corridor widths. September 1987, Volume 11, Issue 5, pp 587–597.
- [3] Department of Civil and Environmental Engineering, University of Maryland, 3130 Jeong H. Kim Engineering Building, College Park, MD 20742, USA
- [4] Learn about Wikipedia, available at; <https://en.wikipedia.org/wiki/HTML>; Last access at 29-march-2018
- [5] Learn about Wikipedia, available at;[https://en.wikipedia.org/wiki/Cascading\\_Style\\_Sheets](https://en.wikipedia.org/wiki/Cascading_Style_Sheets); Last access at 29-march-2018.
- [6] Wang, Z., Tong, V.J.C., Chan, D.: Issues of social data analytics with a new method for ITS analysis of social media data. In: IEEE 6th International Conference on Cloud Computing Technology and Science, eISBN. 978-1-4799-4093-6, pISBN: 978-1-4799-4092-9 Singapore, Singapore (2014)
- [7] Intelligent transportation systems-problems and perspectives A Śładkowski, W Pamuła - 2016 – Springer
- [8] Intelligent Transport Systems: Technologies and Applications  
A Perallos, U Hernandez-Jayo, IJGÃ Zuazola, E Onieva - 2015
- [9] Intelligent Transportation Systems: Smart and Green Infrastructure Design, Second Edition
- [10]Data Analytics for Intelligent Transportation Systems 1st Edition, Mashrur Chowdhury Amy Apon Kakan Dey

