

Factor Analysis of Delay Project MERR-IIC Road Construction at Surabaya Indonesia

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Abstract

Surabaya city as the capital of East Java province requires a network of roads in the city are well in line with the growth of traffic growing rapidly, so as to provide good transport services. In the development of areas that are strategic in Surabaya One development plan road network in the city of Surabaya in order to reduce and divert the flow of traffic in the city center is planned Ring Road East in Surabaya, which is better known as the MERR (Middle Eastern Ring Road). In the construction of MERR-IIC in 2010 there is a delay in implementation that lead to the implementation time into reverse. The most effective way to overcome the delay is to determine the causes of the delay. The purpose of this study was to determine the factors causing delays in construction of MERR-IIC in 2010. The data used are primary data in the form of questionnaires from several people who were directly involved in the implementation and secondary data, reports on the implementation of the SNVT preservation and Roads and Bridges Metropolitan Surabaya. Primary data obtained from the factors causing the delays is; mobilization of materials; labor ; equipment; cash flow contractor and offers a low unit price. This can be proved also through secondary data during a meeting held evidence (Show Cause Meeting / SCM) held until SCM2 where the contractor is given physical target test of 23.030% within 14 days only reached 5.293%. Likewise, in SCM2 test given physical target of 15.589% within 14 days only reached 11.611%. In the SCM contractors are not able to add materials, labor and equipment for the contractor cash flow is not smooth or less working capital. From the data analysis of primary and secondary data shows that the main causal factors of delay in implementation is the mobilization of the material; labor ; the equipment where it is due to the low unit price and offer less working capital. Because the construction of the MERR-IIC will be sustained through 2013, the most effective way to reduce the delay in implementation is stressed during the process of procurement / auction that the committee did not select a potential winner based solely on the lowest bid alone but more selective again and the need for clarification of the mobilization readiness materials, equipment and labor which has included on the subcontracting and other supplier companies.

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1. Introduction

The road has a very important function in the development and growth of the economy of a region and efforts to achieve equitable development and results, where the road is used as accessibility infrastructure and land transportation for people and goods transport. With the availability of the road will greatly support the development of the production sector in areas such as industry, trade, agriculture and so on. Surabaya city as the capital of East Java province requires a road network in a good city in line with the traffic growth which is growing rapidly, so as to provide good transport services. In the development of strategic areas in the city of Surabaya, the indispensable supporting factors, one of which is the infrastructure of the road network. The purpose of development, maintenance, and repair of road transport is improving transportation services in an efficient, reliable, high quality, safe, affordable, and realize the national transportation system in intermodal and integrated with regional development, and being part of a distribution system that can provide and benefits to the wider community, including increasing rural-urban networks are adequate. One of the development plan of the road network in the city of Surabaya in order to reduce and divert

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the flow of traffic in the city center is planned Ring Road East (JLT) in Surabaya, which is better known as road and bridge construction projects Middle Eastern Ring Road (MERR). With the construction of the road is expected MERR traffic flow from Waru roundabout towards the city center, the northern and eastern regions of Surabaya is not centered over the A. Yani street is now very solid and also to support the arterial road network system that has existed towards the bridge SURAMADU , In the implementation of road construction MERR II always encountered some obstacles factors that cause delays in the construction of which is not in accordance with the development plan that has been scheduled. Road Construction MERR II B along 2,850 km in 1996 was completed in 1998, construction of the MERR II A along 1,625 km in 1998 was completed in 2007 and construction of the MERR II C along 6.45 km in 2008 has so far not finished. The length of time required in road construction MERR time is due to the problems in the implementation of land acquisition and the construction period. The length of road construction in the city of Surabaya MERR interesting for further study. Besides this information during the factors causing delays in road construction projects MERR still very minimal. So the need for analysis of delay road construction projects in order to minimize delays in road construction projects MERR, especially for road construction projects MERR II C. With good data collection is expected to be carried out an assessment of the actions in the future. Many factors cause delays in road construction projects MERR II C needs to be studied, among others, integration management, environmental management, time management, cost management, quality management, human resource management, procurement management, risk management, and communication management of these factors made the form of statistics in order to see the relationship each of the factors causing delays in road construction projects MERR II C. By looking at each of the factors causing delays in the construction of road II C and its relationship, made an attempt to minimize delays in road construction projects II C.

The following problem statements are: 1) What factors cause delays in road construction projects MERR II C today? 2) How to minimize delays in road construction projects MERR II C today? Then the research purposes are:: 1) Knowing the factors that cause delays in road construction projects MERRIIC today? 2) Knowing efforts to minimize delays in road construction projects MERR II C today?resolution in Indonesia. The next section discusses the dispute in construction, followed by construction dispute resolution method, and the law and regulation in Indonesia.

2. Literature Review

2.1 Previous Research

Research conducted by Husinsyah (2003), about the factors that affect the time delay the implementation of projects of roads and bridges in the Sub Department of Infrastructure Roads and Bridges in the province of East Kalimantan is the factor of implementation, and procurement of material. While the research conducted by Kasenan (2005), about the potential factors causing delay in timing of projects of roads and bridges in the Public Works Department Kediri concludes that the land acquisition, a factor design review, and supervision which caused the delay time of project implementation.

2.2 Project Management concept

The project can be defined as an activity that takes place within a specified period aimed at achieving a certain goal by using a specific allocation of resources. Therefore the project is temporary, unique

and has a start point and an end point. This is what distinguishes the project to production that are continuous and repetitive. Principal characteristics of the project are as follows (Suharto, 1998):

- a) Have specific goals, the final product or work late;
- b) The amount of costs, schedules and quality criteria goals in the process of achieving the above objectives have been determined;
- c) Be temporary, in the sense generally limited by the completion of the task. The starting point and end point clearly defined;
- d) Non-routine, not repeatedly.

The type and intensity of activities change throughout the project. In the process of achieving the project objectives have been determined no restrictions or constraints that cost to be allocated, the schedule to be met and the quality to be achieved. This constraint is essential for the implementation of the project and is often associated as project goals. Overview of the project objectives presented in Figure 2.1 below.

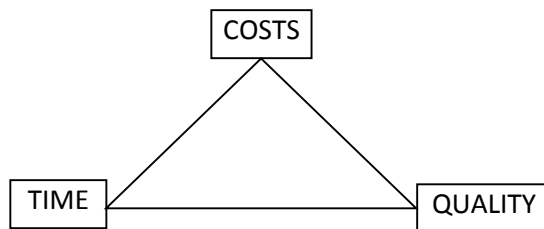


Fig. 2.1 Objective / Constraint Project (Suhartono, 1998)

The cost of the project should be completed at a cost that does not exceed the budget. Time project to be done in accordance with the time period and the end date specified. While the quality of the project should be according to the specifications and criteria required. The third restriction / pull these objectives are, one case; if you want to improve the quality of the project exceeds that specified in the contract will usually result in a rise in the cost of the project, or if you want to press charges, then usually have to compromise with the quality or time. Project management is an integrated process, where individuals who are part of an organization involved both to maintain, develop, mengendali-kan and run programs that kesemuannya directed at targets that have been established and ongoing. Project management can also be viewed as a series of several functional responsibilities to each other and the overall interconnected to form a network of regular and systematic. Networks are a unity interactions so that if carried out an analysis of the activities, it must be analyzed also the impact on other activities. The project is an activity that has a time limit, therefore the project management should be designed to manage the resources that have been allocated to the project and related activities to a certain extent, certain costs and performance. Time, cost and performance is a barrier for a project, and if the project is implemented for through an outside party, then a good relationship with the auction is another barrier that needs to be considered. Thus, management of project basically covers the scope of the activities of planning, organizing, implementing and controlling in order to obtain the results of the implementation of timely, cost and quality.

2.3 Construction Project Management

Project management is the application of knowledge (knowledges), skills (skills), tools (tools) and techniques (techniques) in the project activities to meet project needs (Santoso 2009). Project management is carried out through the application and inegrasi stages of the project management process that is initiating, planning, executing, monitoring and controlling the whole process and finally closing the project. In its implementation, each project is always limited by the constraints

that are affecting each other and are usually referred to as the project triangle constraint, namely the scope of work (scope), time and costs. The third constraint in which the balance will determine the quality of a project. The construction project is a series of activities carried out only one time and generally short-term. In a series of activities, there is a process that is processing the project resources into an activity results in the form of the building. The process that occurs in a series of these activities would involve related parties, either directly maupun indirectly. The relationship between the parties involved in a project distinguished on the functional relationships and labor relations. With so many parties involved in the construction project, the potential for conflict is huge so it can be said that the construction project high enough to contain the conflict.

2.4 Construction Project

Construction activities are activities that must go through a long process and in it found a lot of problems to be solved. In addition, in the construction activity there is a series of successive and interrelated. Normally the series began on the birth of the idea arose from a need, thought could have taken its appropriateness, the decision to develop and manufacture a more detailed description of the formulation of these requirements, pouring in the form of preliminary design, the drafting of a more rincii and certainly, the preparation of the administration for implementation of development by choosing the candidate executor, then the implementation of development at the location that has been provided, as well as maintenance and preparation for use of the building. The Development activities ended when the building began to be used.

2.4.1 Feasibility Study

This phase of the project that aims to convince the owner of the proposed construction project is feasible, both from the aspect of planning and design, economic aspects (costs and resources round of funding), as well as environmental aspects.

2.4.2 Design Stage

Stage design (design) aims to complete the project description and determine the layout, design, construction methods, and the estimated cost in order to obtain approval of the project owners and the authorities involved. This stage is also preparing for the implementation of the necessary information, including the plans and specifications, as well as complete all tender documents.

2.4.3 Procurement Phase / Auction

Phase procurement / tender (procurement / tender) aims to appoint the contractor as an executor or a number of contractors as a subcontractor to carry out the construction in the field. In carrying out the auction process using the provisions of Presidential Decree No. 80 of 2003 in order for the procurement of goods / services that are partially or wholly financed by APBN / APBD conducted in an efficient, effective, open, competitive, transparent, fair / non-discriminatory and accountable and Regulation of the Minister of Public Works No: 43 / PRT / M / 2007 on Standards and Guidelines for the Procurement of Construction Services. Bid evaluation conducted in accordance with the Regulation of the Minister of Public Works No. 43 / PRT / M / 2007 on Standards and Guidelines for the Procurement of Construction Services. The committee will only evaluate the bids that qualify. Bid evaluation method performed by the system fall. Bid evaluation carried out on at least three (3) lowest bids after arithmetical correction. Order of bid evaluation are:

- a). Evaluation Administration;
- b). Technical Evaluation;
- c). Fairness Evaluation of Price.

In the study / evaluation of the Bid, to consider include Self-Estimated Price (HPS) is a benchmark for assessing the reasonableness of the price of the bids and can not be used as a basis for

mengukurkan offers, in evaluating the reasonableness of the offering price may clarification reasonableness of the price if the offer price was considered too low. If the results of the clarification proved assessed price is too low, and the auction participants still expressed able to carry out the work according to document election goods / services provider, the bidders must be willing to raise the guarantee of its implementation be at least a percentage of collateral execution set forth in selecting suppliers / services multiplied by 80% (eighty percent) HPS, when designated as the winning bidder. In the event that the auction participant concerned is not willing to increase the value of collateral execution, the bid may be disqualified and guarantee its bid confiscated to the state, while the goods / services provider itself, in the black list (listed scapegoating) for 1 (one) year and was not allowed to participate in the procurement of goods / services in government agencies

2.4.4 Execution Stage

The implementation phase (construction) aims to realize the building required by the project owner and has been designed by a consultant planner within the constraints of cost and time required. The activities carried out is to plan, coordinate, control of all operations in the field.

2.5 Elements of Building Construction Projects

Efforts to create a buildings starting from the idea stage to the implementation stage. The parties involved in construction projects from the planning stage to implementation can be grouped into three parties, namely the project owner (owner), the planner (designer) and the contractor. Each of these elements has a duty, obligation, responsibility and authority according to the position of each. In the ordinary course of building embodiment, each of the parties in accordance positions interact with each other according working relationship has been established. The elements involved in the construction project are as follows:

- A. The owner of the Project; is a person / entity who have projects and provide jobs or have to give jobs to the service provider and pay for such work. Service users may be perseorangaan, agencies / institutions / government institutions or private.
- B. Consultant; divided into two, namely planning consultant and supervising consultants. Consultant planner can be separated into several types based on specialty, is a consultant in charge of architectural, civil, mechanical and electrical fields and so forth. Various types of these fields generally into one entity called the consultant and planner.
- C. Contactors; is a person / entity who accepts the job and organizing the implementation of appropriate employment costs have been determined based on the plans and regulations and the requirements set. Contactor can be either a private company incorporated under the law or a legal entity that is engaged in the execution of work. The relationship between the three parties going project owners, consultants and contractors organized as follows:
 - Consulting with the project owner; bond under the contract. Consultant providing consulting services in which products are produced in the form of drawings and plans and regulatory requirements, while providing the project owner costs over consulting services provided by the consultant.
 - Contracting with the project owner; bond under the contract. Contractor providing professional services in the form of the building as the realization of the desires of the projects that have been poured into the plans and regulations and requirements by a consultant, while the project owner to provide cost professional services contractors.
 - Consulting with the contractor; bonds based on the implementing regulations. Consultants provide the plans and regulations and requirements, then the contractor must realize into a building.

2.6 Project Controlling

Management control is a systematic effort to set performance standards with the goal of planning, merancang feedback system information, comparing achievement entirely to the standards previously set, determines whether there are irregularities and quantify the significance of the deviation, as well as taking the necessary corrective actions to ensure that resources have been used in the most effective and efficient in achieving the goal. Thus control as one of the management functions are intended to keep the implementation of activities in accordance with a predetermined plan. If the implementation is not in accordance with the plan or standards that have been set, the execution error is only one contributing factor alone. In this connection, RJ Mocler 1972 gives the following definition (Suharto, 1998); "Control is a business that systematically set the standards in accordance with the objectives of planning, designing information systems, comparing the implementation of the standards analyze possible deviations between the conduct and standards, then take corrective action necessary in order that resources are used effectively and efficiently in order to achieve objectives ". Definition of control in the general description of the formation control is to compare between the implementation of an action plan or a defined standard. There are only two sources of causes of irregularities in the implementation, which is not good or default pelaksanaannya inadequate. Causative factors is important to know and be found in order to do the necessary corrective action. Project control process carried out on all the activities included in the project life cycle, which generally involves banyakk activity and have a specific schedule already. When compared with the control activities of a routine or continuous, then the control of the project has its own specificity because it involves many activities that are interrelated and have a specific schedule. The purpose of the control of the project is to ensure that a project is completed exactly according to the specifications and quality standards, on time and with the use of financial resources in accordance with the allocation of funds.

2.7 Project Time Controlling

One component of the project is how to keep control of the project that is completed in accordance with a predetermined schedule. Therefore, project time management control should include the processes needed to ensure completion of the project. The main process in implementing the project time control is as follows:

- 1) Formulate activity (Activity Definition)
- 2) Prepare the order of activity (Activity sequency)
- 3) Determine the approximate duration of activity (Activity Duration Estimating)
- 4) Making the implementation schedule (Schedule Development)
- 5) Controlling the implementation schedule (Schedule Control). Each process in project control interconnected to each other wherein each of the process involves the human resources either individually or in groups depending on their needs.

2.8 Project Delay

Delays in construction projects means increasing time completion of projects that have been planned and included in the contract documents (Suharto, 1998). Timely completion of the work is not a shortage of the level of productivity that would result in a waste of financing, either in the form of direct funding spent on government construction projects, as well as swelling tangible investments and losses on private projects. The active role of management is one key to successful management of the project. Assessment of the project schedule was treated for fundamental changes in order to determine the pace of project completion delays can be avoided or reduced. If the late service

providers carry out the work on schedule, the Commitment Officer must give a written warning or subjected to the provisions of the contract in accordance with Article 33. Critical namely:

- 1) In the first period (physical plan of implementation of 0% - 70% of the contract), the physical realization of the late implementation of the greater of 10% of the plan;
- 2) In the second period (the physical plan of implementation of 70% - 100% of the contract), the physical realization of the late implementation of greater than 5% of the plan.
- 3) Physical plan of implementation of 70% - 100% of the contract, the physical realization of the late implementation of less than 5% of the plan and will exceed the current budget year.

If the delay in execution of work caused by the Committing Officer, then subjected to the provisions in accordance with Article 56 on compensation. Compensation may be granted to service providers when it can be proved detrimental to the service provider.

2.9 Delay Impact

The impact of project delays can cause losses, losses due to delays experienced by the contractor as a project executive, party planners and consultants as project supervisor and the owner (owner). The disadvantages include:

- 1) The Contactor

Delays in completion of the project means that the increase in overhead due to increased length of time of execution, also means the loss due to the possibility of price increases due to inflation and rising labor costs. As well as the retention of capital contractors will most likely be used for other projects.

- 2) The Consultant

The consultant will suffer a loss on time, because of the delay. The consultant concerned will be hampered in working on other projects.

- 3) The owner (Owner)

Project delays for the owner (owner) means the loss of income from the project that should be used or bypassed. If the project has not been completed certainly delay it will cause a loss in terms of community service, or harm the service program had been developed. This loss can not be valued in money and may not be paid back.

Project delays caused by several factors. Factors that cause delays in a construction project may come from contractors, consultants, owners (owner), as well as all the parties are jointly involved in the project. In detail to determine the factors that cause delays in construction projects are grouped as follows:

- 1) Material (materiality)
- 2) Employment (manpower)
- 3) Hardware (equipment)
- 4) Financial (financial)
- 5) Characteristic Points (site characteristic)
- 6) Managerial (managerial)
- 7) Other factors (other factors)

2.10 Sampling Theory

The sample is a subset (subset) of the units of the population. The sample is part of a population that is expected to represent the population penelitian. So that information obtained from the sample truly represents the population, the sample should represent the characteristics of the population it represents. Gay (1976) offers some minimum acceptable size is based on the type of research, as follows:

- 1) Descriptive research: 10% of the population. For a very small population required a minimum of 20%.
- 2) Research the correlation: 30 samples.
- 3) Penelitim ex post facto or casual comparative study: 15 samples per group.
- 4) Research experiment: 15 samples per group. Some experts believe that 30 samples per group can be considered as the minimum size.

In this study population who used the parties directly related to road construction projects MERR II C Surabaya is:

- a) Implementing Agency National Road V: 2 respondents
- b) Public Works Department of East Java Province: 2 respondents
- c) SNVT Preservation and Development of Roads and Bridges Metropolitan Surabaya: 4 respondents
- d) SNVT Planning and Supervision of Road and Bridge Metropolitan Surabaya as technical planner: 2 respondents
- e) Contractor: 5 respondents
- f) Supervisor: 5 respondents

In the research Delay Factor Analysis MERR Road Construction Project II C Surabaya, East Java sampling technique used was purposive sampling. The purposive sampling is a sampling technique with a certain consideration, in this case that would be the respondent sample are those who understand well the causes of delays in road construction project in MERR II C.

2.11 Analysis Descriptive Statistics

Descriptive statistics are statistics used to describe or give a picture of the object to be studied through the data sample or population as is, without analyzing and making conclusions apply to the public. Descriptive analysis purposes to create a systematic overview of factual and accurate data about the facts and the relationship between the phenomenon under study. One form of analysis is the concluding activity of large amounts of raw data so that results can be interpreted. Classify, or separate the components or the relevant part of the overall data is also one form of analysis to make the data easier to manage. Setting, sorting or manipulation of data can provide descriptive information that will answer the questions in the problem definition. All forms of analysis to try to describe the consistent patterns in the data, so the results can be studied and interpreted briefly. Each research must be able to present the data obtained, either through observation, interviews, questionnaires (questionnaire) as well as documentation. The basic principle of communicative and presentation of the data is complete, in the sense of the data presented may attract others to read and easy to understand its contents.

3. Research Method

3.1 Data Collection Methods

The data in this study consisted of secondary data that already exists and is taken directly to the instasi-relevant agencies and the primary data is data taken directly by conducting field surveys in order to complement the secondary data that is not available or the condition of the data that is old and inaccurate again

3.1. Primary Data

Primary data were collected to complete the data and information that is not covered, conduct field surveys to complete the data of technical conditions road construction projects MERR II C. This data is used to describe the variables factors that cause delays in road building projects estab- MERR II C. The collection of primary data in the form of questionnaires to people who are involved either directly or indirectly in road construction projects MERR II C who know and understand about the road construction project MERR IIC. People are each of the following:

- a) Implementing Agency National Road V: 2 respondents
- b) Public Works Department of East Java Province: 2 respondents
- c) SNVT Preservation and Development of Roads and Bridges Metropolitan Surabaya: 4 respondents
- d) SNVT Planning and Supervision of Road and Bridge Metropolitan Surabaya as technical planner: 2 respondents
- e) Contractor: 5 respondents
- f) Supervisor: 5 respondents

3.2 Secondary Data

Secondary data were obtained through agencies associated with this research, such as: Center for the Implementation of the National Road V, the Public Works Department of East Java Province, SNVT Preservation and Development of Roads and Bridges Metropolitan Surabaya, SNVT Planning and Supervision of Road and Bridge Metropolitan Surabaya as the planner of technical, contractor and Consultant Supervisor, and other related intasi-instasi collected in the form of daily, weekly and monthly.

3.3 Research Procedure

The stages are carried out in this study are as follows:

- 1) Collecting data reports related to road construction projects MERR II C Surabaya;
- 2) Survey the form of questionnaires to the parties who are involved either directly or indirectly in road construction projects MERR II C Surabaya who know and understand about the road construction project MERR IIC Surabaya;
- 3) Analysis of the factors causing delays in road construction projects MERR II C Surabaya by using descriptive statistical analysis.

Results dominant factor based on descriptive analyzes the causes of delays in the construction of road MERR II C Surabaya were compared with the results of the secondary data from the SNVT Preservation and Development of Roads and Bridges Metropolitan Surabaya and SNVT Planning and Supervision of Road and Bridge Metropolitan Surabaya

as planners technical form of technical data of the project and schedule project plans the construction of Jalan Kota Surabaya MERR II C;

- 4) From these results at no. 3 settlement analysis and countermeasures to minimize delays in road construction projects MERR II C at a later stage.

3.4 Research Stage

The method used to determine the causes of delays in road construction projects MERR II C by using descriptive analysis. The measures undertaken are:

- 1) Formulation of the problem;
- 2) The purpose of the study;
- 3) The collection of data is needed in research, both secondary data and primary data;
- 4) Analyze the data obtained and compiled the factors that cause delays in road construction projects MERR II C Surabaya
- 5) Efforts to minimize delays in road construction projects MERR II C Surabaya in the next stage of development.

4. Analysis Of Results And Discussion

4.1 Test Research Instruments

Instrument in the measurement of primary data used in this study a questionnaire. The questionnaire design for the measurement variables of the causes of delays in Road Construction Project MERR IIC Surabaya. Questionnaire grouped into seven (7) factors causing delays in Road Construction Project MERR IIC Surabaya, namely:

- 1) Material (material)
- 2) Employment (manpower)
- 3) Hardware (equipment)
- 4) Financial (financial)
- 5) Characteristic Points (site characteristic)
- 6) Managerial (managerial)
- 7) Other factors (other factors).

4.2 Characteristics of Respondents

The number of respondents is taken as many as 20 respondents. The amount represents all respondents who regarded know and understand all the problems that cause delays MERR Road Construction Project IIC Surabaya.

4.2.1 Delay Due Material

A. Changes in Materials

Distribution of respondents stated that changes in the field of materials can cause delays, acquired 70% of respondents stated Never, and 30% of respondents said less often.

B. Material Quality

Distribusi responden yang menyatakan kualitas bahan di lapangan dapat menyebabkan keterlambatan, diperoleh 90% responden menyatakan Kurang Sering, dan masing-masing 5% responden menyatakan Cukup Sering dan Sering.

4.2.2 Delay Due to Labor

A. Availability of Labor

Distribution of respondents stated that the availability of labor in the field can cause keterlambatan, acquired 80% of respondents said less often, 15% of respondents stated Quite Often and 5% of respondents stated Never.

B. Labor Expertise

Distribution of respondents that became labor expertise in the field can cause delays, acquired 75% of respondents said less often and 25% of respondents stated Quite often.

C. Replacement Workers

Distribution of respondents who became clearer-the replacement workers in the field can cause delays, acquired 75% of respondents said less often, 20% of respondents stated Quite Often and 5% of respondents stated Never.

4.2.3 Delay Due Tools

A. Damage Equipment

Distribution of respondents who became clearer-the damage to the equipment in the field can cause delays, acquired 75% of respondents said often, and 25% of respondents stated Quite often.

B. Lack of Equipment

Distribution of respondents who became clearer-the shortage of equipment in the field can cause delays, acquired 75% of respondents stated Quite often, 15% of respondents said often and 10% of respondents said less often.

C. Mobilization Equipment

Distribution of respondents who became clearer-the mobilization of equipment in the field can cause delays, acquired 65% of respondents stated Quite often, 20% of respondents expressed less frequently and 15% said often.

4.2.4 Delay Due to Finance

A. Cash Flow Finance Contractors

Distribution of respondents who became clearer-the contractor's financial cash flow may cause delays, acquired 80% of respondents stated Quite often, 15% of respondents said often and 5% of respondents said less often.

B. Payment The Owner

Distribution of respondents who became clearer-party payment the owner may cause delays, acquired 75% of respondents stated Never, and 25% of respondents said less often.

C. Material Prices

Distribution of respondents stated that changes in the price of materials can cause delays, acquired 75% of respondents stated Quite often, 15% of respondents said often and 10% of respondents said less often.

4.2.5 Delay Due to Karakteristik Places

A. Conditions Project Topography

Distribution of respondents who became clearer-the topographical conditions of the project may cause delays, acquired 75% of respondents said less often, 15% of respondents said Never and each 5% of respondents stated Quite Often and often.

B. Project Environmental Conditions

Distribution of respondents who became clearer-kan project environmental conditions may cause delays, acquired 80% of respondents said less often, 15% of respondents stated Quite Often and 5% of respondents stated Never.

C. Accessibility Project

Distribution of respondents who became clearer-the accessibility of the project can be menyebabkan-kan delays, acquired 80% of respondents said less often, 15% of respondents stated Quite Often and 5% of respondents stated Never.

4.2.6 Delay Due Managerial

A. Monitoring Project

Distribution of respondents who became clearer-kan project supervision can menyebabkan-kan delays, acquired 80% of respondents said less often, 15% of respondents stated Quite Often and 5% of respondents stated Never.

B. Quality Control Work

Distribution of respondents who became clearer-kan pengontrolan quality of work can cause delays, acquired 80% of respondents said less often, 15% of respondents stated Quite Often and 5% of respondents stated Never.

C. Changes in Design

Distribution of respondents who became clearer-kan design changes may cause delays, acquired 80% of respondents said less often, 15% of respondents stated Quite Often and 5% of respondents stated Never.

4.2.7 Delay Due to Other Factors

A. Intensity Rainfall

Distribution of respondents who became clearer-the disruption of rainfall intensity can cause delays, acquired 75% of respondents stated Quite often, 25% of respondents said less often.

B. Price Offer <80% OE

Distribution of respondents who became clearer-the bid price <80% OE may cause delays, acquired 75% of respondents stated Quite often, 25% of respondents said less often.

C. Work Accident

Distribution of the respondents became clearer-work accidents can cause delays, acquired 75% of respondents stated Quite often, 25% of respondents said less often.

4.3 Cause Delays the Development Project II Road MERR C Surabaya Factors

4.3.1 Material Factor (Material)

From the results of the questionnaire, respondents were asked for opinions based on material factors that exist in the field that can cause project delays. From the results of the questionnaire obtained the distribution of respondents stating material factors that may cause delays, is 85% of respondents said the mobilization of material, 10% of respondents said the quality of materials and 5% of respondents said change material.

4.3.2 Factors Labour (Manpower)

From the results of the questionnaire, the respondents polled by the labor factor on the ground that can cause project delays. From the results of the questionnaire obtained the distribution of respondents stating workforce factors that could cause keterlam-ty, was 75% of respondents said the availability of labor, 20% of respondents said labor skills and 5% of respondents said replacement workers.

4.3.3 Equipment Factor (Equipment)

From the results of the questionnaire, the respondents polled by a factor of existing equipment in the field that can cause project delays. Obtained from the questionnaire respondents stated distribution equipment factors that may cause delays, is 70% of respondents said a shortage of equipment, 20% of respondents said the mobilization of equipment and 10% of respondents said damage to the equipment.

4.3.4 Financial Factors (Financial)

From the results of the questionnaire, the respondents polled by financial factors on the ground that can cause project delays. From the results of the questionnaire obtained distribution of respondents said that financial factors that may cause delays, is 80% of respondents said the financial cash flow contractors, 15% of respondents said changes in material prices and 5% of respondents said the owner payment.

4.3.5 The Characteristic factor (Site Caharacteristic)

From the results of the questionnaire, the respondents polled by factors characteristic of a place that is in the field that can cause project delays. From the results of the questionnaire obtained the distribution of respondents stating the characteristics of a factor that can cause delays, is 60% of respondents said topography of the project, 25% of respondents said the accessibility of the project and 15% of respondents said environmental conditions of the project.

4.3.6 Managerial Factor (Managerial)

From the results of the questionnaire, the respondents polled by managerial factors that exist in the field that can cause project delays. From the results of the questionnaire obtained the distribution of respondents stating managerial factors that may cause delays, is 70% of respondents said quality control supervisor a good job of the consultant or from the supervisor of the project owner, 20% of respondents said supervision and 10% of respondents said the design changes.

4.3.7 Other factors (Other Factors)

From the results of the questionnaire, the respondents polled by factors other factors on the ground that can cause project delays. Distribution obtained from the questionnaire respondents stated that factors other factors that may cause delays, is 85% of respondents said the offer price <80% OE, 10% of respondents said interference intensity of rain and 5% of respondents said the accident.

4.4 Evaluation Schedule / S curve

Under the existing contract, the duration of work is 240 calendar days starting from May 3 to December 28, 2010. schedul work in accordance with the contract and the realization that occur in the field based on the type of work that exists, delivered in the form of the S curve to facilitate the

implementation of the control of the field , Pictures curve S jobs Road Construction Package II C MERR fiscal year 2010, can be seen in Fig. 4.1.

NO.	URAIAN PEKERJAAN	BOBOT	TAHUN 2010								KET.	
			MEI	JUNI	JULI	AGTS.	SEP.	OKT.	NOV.	DES.		
DIVISI 1	UMUM	2.574	0.050	-	2.524	-	-	-	-	-	-	100
DIVISI 2	DRAINASE	2.849	-	0.612	0.753	0.976	0.100	0.255	0.129	0.129	-	90
DIVISI 3	PEKERJAAN TANAH	29.723	0.107	3.960	4.863	7.411	4.431	6.941	1.144	0.007	-	80
DIVISI 4	PELEBARAN PERKERASAN & BAHU JALAN	-	-	-	-	2.525	3.715	3.645	2.969	-	-	70
DIVISI 5	PERKERASAN BERBUTIR	10.090	-	-	-	0.553	3.210	4.282	2.045	-	-	60
DIVISI 6	PERKERASAN ASPAL	26.427	-	-	0.088	4.413	6.693	8.973	6.348	-	-	50
DIVISI 7	STRUKTUR	25.779	-	0.617	4.613	8.660	3.021	5.551	3.317	-	-	40
DIVISI 8	PENGEMBALIAN KONDISI DAN PEK. MINOR	2.331	-	0.014	-	-	-	0.729	0.896	0.692	-	30
DIVISI 9	PEKERJAAN HARIAN	0.227	-	-	0.006	0.113	-	-	-	-	-	20
DIVISI 10	PEKERJAAN RUTIN	-	-	-	0.014	-	0.002	0.003	0.026	-	-	10
	JUMLAH	100.00										0
2010	RENCANA PROGRES BULANAN		0.157	5.203	12.867	17.713	15.175	24.451	16.528	7.906		
	RENCANA KOMULATIF BULANAN	0.000	0.157	5.360	18.227	35.940	51.115	75.566	92.094	100.00		
	AMANDEMEN NO.01						52.341	70.681	90.742	100.00		
	REALISASI PROGRES BULANAN		0.389	4.040	16.324	7.776	5.015	13.305	12.593	-		
	REALISASI KOMULATIF BULANAN		0.389	4.429	20.753	28.529	33.544	46.849	59.442	100.00		
	DEVIASI (- / +)		0.232	-0.931	2.526	-7.411	-18.797	-28.717	-32.652			

Fig. 4.1 Secondary Data From the S curve

Based on the existing S curve, it can be seen that the project MERR II-C has been delayed in the second month after SPMK namely in June and then the delay becomes larger in the next month. Based on the results of interviews with the Unit for Preservation and Development of Roads and Bridges Metropolitan Surabaya, this is because at the beginning of the work the contractor was late in the mobilization of equipment and materials to the project site, so much going on the existing workforce can not work optimally.

4.3 Evaluation of Project Delays

Under the contract documents are made, the general terms of the contract, Article 33.1, the project has already entered into contracts which must be held Critical handling of critical contact with evidentiary meetings or show cause meeting (SCM). Critical contract in the first period (physical plan of implementation of 0% -70% of the contract, the actual physical implementation-bat terlam greater of 10% of plan ., In the second period (the physical plan of implementation of 70% -100% of the contract, the physical realization implementers late enforcing the greater of 5% of the plan. Plan physical contract implementation 70% -100% of the contract, the physical realization of the late implementation of less than 5% of the plan and will exceed the current budget year. The results of the monitoring delays in the realization of the work and mobilization of equipment in the period of September and October, can be seen in table 4.2, 4.3, 4.4 and 4.5 below.

Table 4.2. Monitoring Works Realisation Period September 27 to October 3

No Div	URAIAN PEKERJAAN	SAT	TARGET SCM 27 Sep-10 Okt		REALISASI PEKERJAAN SELAMA 14 HARI (KALENDER)				KET
			VOL	BOBOT (%)	Periode 27 Sept-3 Okt 2010				
					Rencana		Realisasi		
2.1	Galian tanah untuk selokan	m3	675.00	0.032	337.500	0.016	-	-	
2.5 (1)	Geotextile	m2	8,500.00	0.229	6,375.000	0.172	11,200.000	0.302	
				0.261		0.188		0.302	
3.1 (1)	Galian biasa	m3	6,660.00	0.294	5,550.000	0.245	5,805.950	0.257	
3.2 (1)	Timbunan biasa	m3	6,300.00	1.310	3,150.000	0.655	-	-	
3.2 (2)	Timbunan pilihan	m3	25,641.00	6.146	12,820.500	3.073	14,168.000	3.396	
3.2 (3)	Timbunan pilihan di tanah rawa	m3	6,562.50	1.590	3,281.250	0.795	-	-	
3.3	Penyiapan badan jalan	m2	19,980.00	0.068	11,988.000	0.041	6,346.000	0.022	
				9.408		4.809		3.674	
5.1 (1)	Lapis pondasi agregat kelas A	m3	3,250.00	1.799			-	-	
5.1 (2)	Lapis pondasi agregat kelas B	m3	4,680.00	2.398	1,872.000	0.959	-	-	
				4.197		0.959		-	
7.1 (3)	Beton K - 350	m3	711.28	2.351	355.640	1.175	-	-	
7.1 (5)	Beton K - 250	m3	363.55	1.113	181.776	0.556	84.710	0.259	
7.1 (8)	Beton K - 125	m3	985.21	1.410	492.605	0.705	10.000	0.014	
7.3 (1)	Baja tulangan U - 24 polos	Kg	20,978.83	0.592	10,489.416	0.296	1,011.520	0.029	
7.3 (3)	Baja tulangan U - 32 ulir	Kg	113,408.15	3.335	56,704.074	1.667	7,221.640	0.212	
7.6 (6)	Pondasi cerucuk	m'	20,800.00	0.368	10,400.000	0.184	-	-	
				9.167		4.584		0.514	
	JUMLAH			23.03					
INDUK	RENC. INDUK MINGGUAN					10.540			
	RENC. INDUK (KUMULATIF)					56.345			
	REAL INDUK MINGGUAN							4.490	
	REAL INDUK (KUMULATIF)							33.383	
	DEVIASI (- / +)							(22.962)	

Table 4.3 Monitoring Works Realisation Period 4 to 10 October 2010

No Div	URAIAN PEKERJAAN	SAT	TARGET SCM 27 Sep-10 Okt		REALISASI PEKERJAAN SELAMA 14 HARI (KALENDER)				KET
			VOL	BOBOT (%)	Periode 4 - 10 Okt 2010				
					Rencana		Realisasi		
2.1	Galian tanah untuk selokan	m3	675.00	0.032	337.500	0.016	-	-	
2.5 (1)	Geotextile	m2	8,500.00	0.229	2,125.000	0.057	-	-	
				0.261		0.073		-	
3.1 (1)	Galian biasa	m3	6,660.00	0.294	1,110.000	0.049	2,759.475	0.122	
3.2 (1)	Timbunan biasa	m3	6,300.00	1.310	3,150.000	0.655	-	-	
3.2 (2)	Timbunan pilihan	m3	25,641.00	6.146	12,820.500	3.073	3,713.600	0.890	
3.2 (3)	Timbunan pilihan di tanah rawa	m3	6,562.50	1.590	3,281.250	0.795	-	-	
3.3	Penyiapan badan jalan	m2	19,980.00	0.068	7,992.000	0.027	1,958.500	0.007	
				9.408		4.599		1.019	
5.1 (1)	Lapis pondasi agregat kelas A	m3	3,250.00	1.799	3,250.000	1.799	-	-	
5.1 (2)	Lapis pondasi agregat kelas B	m3	4,680.00	2.398	2,808.000	1.439	-	-	
				4.197		3.238		-	
7.1 (3)	Beton K - 350	m3	711.28	2.351	355.640	1.175	-	-	
7.1 (5)	Beton K - 250	m3	363.55	1.113	181.776	0.556	24.640	0.075	
7.1 (8)	Beton K - 125	m3	985.21	1.410	492.605	0.705	50.000	0.072	
7.3 (1)	Baja tulangan U - 24 polos	Kg	20,978.83	0.592	10,489.416	0.296	51.840	0.001	
7.3 (3)	Baja tulangan U - 32 ulir	Kg	113,408.15	3.335	56,704.074	1.667	2,896.560	0.085	
7.6 (6)	Pondasi cerucuk	m'	20,800.00	0.368	10,400.000	0.184	10,200.000	0.180	
				9.167		4.584		0.414	
	JUMLAH			23.03					
INDUK	RENC. INDUK MINGGUAN					12.494			
	RENC. INDUK (KUMULATIF)					61.277			
	REAL INDUK MINGGUAN							1.433	
	REAL INDUK (KUMULATIF)							34.816	
	DEVIASI (- / +)							(26.461)	

Table 4.4 Realization Monitoring Equipment Mobilization Period 27-30 September 2010

No	URAIAN PEKERJAAN	Jumlah	RENC. MOBILISASI		Jumlah alat				KET.
					Periode September 2011				
					27	28	29	30	
1	Exavator	1	Renc.	27-Sep-10	4	4	4	4	Harus kondisi baik
			Real.		2	2	2	2	
2	Bouladozer	2	Renc.	27-Sep-10	2	2	2	2	Harus kondisi baik
			Real.		1	1	1	1	
3	Vibro Roller	2	Renc.	27-Sep-10	2	2	2	2	Harus kondisi baik
			Real.					1	
4	Water tank	2	Renc.	27-Sep-10	1	1	1	1	Harus kondisi baik
			Real.		1	1	1	1	
5	Pompa air	3	Renc.	27-Sep-10	2	2	3	3	Harus kondisi baik
			Real.		2	2	2	2	
6	Truck mixer	1	Renc.	28-Sep-10	1	1	1	1	Harus kondisi baik
			Real.		1	1	1	1	
7	Vibrator	1	Renc.	29-Sep-10	1	1	1	1	Harus kondisi baik
			Real.		1	1	2	2	
8	Grader	1	Renc.	4-Oct-10					Harus kondisi baik
			Real.						

Table 4.5 Monitoring Actual Equipment Mobilization Period October 1 to October 3 2010

No	URAIAN PEKERJAAN	Jumlah	RENC. MOBILISASI		Jumlah alat										KET.		
					Periode Oktober 2011												
					1	2	3	4	5	6	7	8	9	10			
1	Exavator	1	Renc.	27-Sep-10	4	4	4	4	4	4	4	4	4	4	4	4	Harus kondisi baik
			Real.		2	2	2	2	2	2	2	2	2	2	2	2	
2	Bouladozer	2	Renc.	27-Sep-10	2	2	2	2	2	2	2	2	2	2	2	2	Harus kondisi baik
			Real.		1	1	1	1	1	1	1	1	1	1	1		
3	Vibro Roller	2	Renc.	27-Sep-10	2	2	2	2	2	2	2	2	2	2	2	2	Harus kondisi baik
			Real.		2	2	2	1						1	1		
4	Water tank	2	Renc.	27-Sep-10	2	2	2	2	2	2	2	2	2	2	2	2	Harus kondisi baik
			Real.		1	1	1	1	1	1	1	1	1	1	1		
5	Pompa air	3	Renc.	27-Sep-10	3	3	3	3	3	3	3	3	3	3	3	3	Harus kondisi baik
			Real.		2	2	2	2	2	2	2	2	2	2	2		
6	Truck mixer	1	Renc.	28-Sep-10	1	1	1	1	1	1	1	1	1	1	1	1	Harus kondisi baik
			Real.		1	1	1	1	1	1	1	1	1	1	1		
7	Vibrator	1	Renc.	29-Sep-10	1	1	1	1	1	1	1	1	1	1	1	1	Harus kondisi baik
			Real.		2	2	2	2	1	1							
8	Grader	1	Renc.	4-Oct-10				1	1	1	1	1	1	1	1	Harus kondisi baik	
			Real.														

Based on the results of monitoring the realization of the work and mobilization of equipment as outlined in the results of the evaluation of evidence meeting the Show Cause Meeting (SCM), obtained by the realization that mampu Berdasarkan results of monitoring the realization of the work and mobilization of equipment as outlined in the results of the evaluation of evidence meeting the Show Cause Meeting (SCM), obtained by the realization that able to be achieved in the first week only 4.490% and 1.433% the second week, so that realization is achieved by the end of the period of verification is only 5.923% of the planned target of 23.030% (for 14 calendar days), so the delay in progress is still quite high, namely: -26.461% of plan of 61.277%, 34.816% realization. In accordance weekly report dated October 25 to 31 2010 physical progress plan realization of 46.516% 70.681%, deviation - 24.165%, then the corresponding chapter IV of the general contract terms Article 33 critical contracts, is included in the second period (the physical plan of implementation of 70% -100 % of the contract) physical realization of the late implementation of greater than 5% of the plan. From the results of the meeting for 14 days visible proof that the contractor was late in the

mobilization of equipment and materials according the agreed time. This is due to unpreparedness contractors meet the terms agreed in the contract.

4.3 Auction / Procurement / Contracting Service

In the process of the procurement of goods / services contracting is done through the method of public auction, namely the method of selecting providers of goods / services conducted openly with the announcement widely through the mass media (newspapers / electronic) and an official announcement board for general lighting so that the public business world If you meet the qualifications to apply.

Of secondary data recorded that as many as 30 companies submit bids yet qualified 28 companies. From the results after the bid opening and evaluation of the results obtained arithmetic sequence starting from the lowest offer as in table 4.6.

From the results of the sequence taken offers three (3) lowest bids were subsequently conducted an evaluation of the lowest bid method fall that includes an evaluation system administration, engineering and price with the following results:

It is achieved in the first week only 4.490% and 1.433% the second week, so that realization is achieved by the end of the period of verification is only 5.923% of the planned target of 23.030% (for 14 calendar days), so the delay in progress is still quite high, namely: -26.461% of the plan 61.277%, 34.816% realization. In accordance weekly report dated October 25 to 31 2010 physical progress plan realization of 46.516% 70.681%, deviation - 24.165%, then the corresponding chapter IV of the general contract terms Article 33 critical contracts, is included in the second period (the physical plan of implementation of 70% -100 % of the contract) physical realization of the late implementation of greater than 5% of the plan. From the results of the meeting for 14 days visible proof that the contractor was late in the mobilization of equipment and materials according the agreed time. This is due to unpreparedness contractors meet the terms agreed in the contract.

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From the results of the sequence taken offers three (3) lowest bids were subsequently conducted an evaluation of the lowest bid method fall that includes an evaluation system administration, engineering and price with the following results:

Table 4.6. the sequence starting from the lowest offer

No	Nama Perusahaan	Nilai Penawaran Asli			Nilai Penawaran Terkoreksi			Keterangan (Memenuhi/ Tidak)
		Harga	% thd HPS	Ranking	Harga	% thd HPS	Ranking	
1	PT. A	26,134,561,000.00	69.29	1	26,134,561,000.00	69.29	1	
2	PT. B	26,639,978,000.00	70.63	2	26,639,978,000.00	70.63	2	
3	PT. C	26,654,202,000.00	70.67	3	26,661,655,000.00	70.69	3	tidak merubah peringkat
4	PT. D	26,795,147,000.00	71.04	4	26,795,147,000.00	71.04	4	
5	PT. E	26,851,197,000.00	71.19	5	26,851,105,000.00	71.19	5	tidak merubah peringkat
6	PT. F	27,356,613,000.00	72.53	6	27,356,613,000.00	72.53	6	
7	PT. G	27,601,778,000.00	73.18	7	27,601,777,000.00	73.18	7	tidak merubah peringkat
8	PT. H	28,182,878,000.00	74.72	8	28,182,878,000.00	74.72	8	
9	PT. I	28,199,388,000.00	74.76	9	28,199,388,000.00	74.76	9	
10	PT. J	29,477,367,700.00	78.15	10	29,477,367,700.00	78.15	10	
11	PT. K	29,694,790,000.00	78.73	11	29,694,790,000.00	78.73	11	
12	PT. L	29,760,000,000.00	78.90	12	29,760,000,000.00	78.90	12	
13	PT. M	29,891,446,000.00	79.25	13	29,891,446,000.00	79.25	13	
14	PT. N	30,171,420,000.00	79.99	14	30,155,030,000.00	79.95	14	tidak merubah peringkat
15	PT. O	30,664,540,630.63	81.30	15	30,664,513,000.00	81.30	15	tidak merubah peringkat
16	PT. P	30,719,339,000.00	81.45	16	30,719,339,000.00	81.45	16	
17	PT. Q	31,868,871,072.00	84.49	17	31,868,871,072.00	84.49	17	
18	PT. R	31,979,190,000.00	84.79	18	31,979,190,000.00	84.79	18	
19	PT. S	32,134,694,000.00	85.20	19	32,134,694,000.00	85.20	19	
20	PT. T	32,250,920,000.00	85.51	20	32,250,920,000.00	85.51	20	
21	PT. U	32,454,101,000.00	86.05	21	32,410,990,000.00	85.93	21	tidak merubah peringkat
22	PT. V	32,949,351,000.00	87.36	22	32,933,472,000.00	87.32	22	tidak merubah peringkat
23	PT. W	32,981,226,000.00	87.44	23	32,981,226,000.00	87.44	23	
24	PT. X	33,465,678,000.00	88.73	24	34,514,272,000.00	91.51	25	berubah
25	PT. Y	33,500,000,000.00	88.82	25	33,500,000,000.00	88.82	24	berubah
26	PT. Z	34,967,272,967.00	92.71	26	34,967,272,967.00	92.71	26	
27	PT. AA	35,486,486,000.00	94.09	27	35,486,486,000.00	94.09	27	
28	PT. BB	36,737,711,107.59	97.40	28	36,976,667,626.69	98.04	28	tidak merubah peringkat

4.3.1 Evaluation of Administration

Evaluation based on completeness of the administrative requirements for bidding documents and completeness of supporting documents submitted by the contractor who pass the evaluation stage of administration. Administration Evaluation results are shown in Table 4.7 below

Table 4.7 Evaluation of Administration

No	Uraian	Nama Perusahaan			
		PT. A	PT. B	PT. C	PT. D
1	Kelengkapan Dokumen Penawaran	Ada	Ada	Ada/ tidak sesuai	Ada
2	Surat Penawaran	Ada	Ada	Ada	Ada
3	Surat Kuasa	Ada	-	Ada	-
4	Jaminan Penawaran	Ada	Ada	Ada	Ada
5	Daftar Kuantitas dan Harga	Ada	Ada	Ada	Ada
6	Analisa Harga Satuan MPU	Ada	Ada	Ada/ tidak sesuai	Ada
7	Daftar Upah	Ada	Ada	Ada	Ada
8	Harga Bahan	Ada	Ada	Ada	Ada
9	Harga Operasional Peralatan	Ada	Ada	Ada	Ada
10	Metode Pelaksanaan	Ada	Ada	Ada	Ada
11	Jadwal Waktu Pelaksanaan	Ada	Ada	Ada	Ada
12	Personil Inti	Ada	Ada	Ada	Ada
13	Peralatan Utama	Ada	Ada	Ada	Ada
14	Bagian Pekerjaan Yang Disubkontrakan	Ada	Ada	Ada	Ada
15	Perjanjian Kemitraan	Tidak Ada	Tidak Ada	Ada	Tidak Ada
16	Bukti Kepemilikan/Sewa Beli/Sewa Peralatan	Ada	Ada	Ada	Ada
KESIMPULAN		MEMENUHI	MEMENUHI	Gugur	MEMENUHI

4.3.2 Technical evaluation

Technical evaluation based on technical proposals regarding the method of execution of the work, the time schedule of implementation, technical specifications, and the list of personnel qualifications submitted by the contractor who pass the technical evaluation stage. Technical Evaluation results are shown in Table 4.8 as follows

No.	Penawar	Tabel 3.1 Metode Pelaksanaan	Tabel 3.2 Jadual Waktu Pelaksanaan	Tabel 3.3 Spesifikasi Teknis	Tabel 3.4 Daftar Personil Inti	Tabel 3.5 Jenis Kapasitas, Komposisi dan Jumlah	Tabel 3.6 Bagian Pekerjaan yang disubkontraikkam	Kesimpulan	Keterangan
1	PT. A	√	√	√	√	√	√	Memenuhi	
2	PT. B	√	√	√	√	√	√	Memenuhi	
3	PT. D	√	√	√	√	√	√	Memenuhi	

4.3.3 Evaluation of Fairness Price

Evaluation of the reasonableness of the price based on the evaluation of a price quote submitted by the contractor as well as compared to HPS work submitted by the contractor who pass the evaluation stage reasonableness of price. Price Fairness Evaluation results are shown in Table 4.9 as follows

NO	NAMA PENAWAR	Tabel 4.1 Evaluasi Harga Penawaran	Tabel 4.2 Evaluasi HSP Timbang > 110% HSP dari HPS	Tabel 4.3 Evaluasi Kewajaran Harga	KESIMPULAN	KETERANGAN
1	PT. A	√	√	√	Memenuhi	
2	PT. B	√	√	√	Memenuhi	
3	PT. D	√	√	√	Klarifikasi	

From the results of evaluation of the lowest bid, the MAP is proposed as a potential winner of the first, and since the bid price <80% HPS then in accordance with Presidential Decree No. 80 2003 must be willing to raise its execution guarantee of 5% x 80% HPS or equal to 5% x 80% x Rp. 37,717,444,000.00 = Rp. 1,508,697,760.00 from its original value of collateral 5% x Rp. 26,134,561,000.00 = Rp. 1,306,728,050.00

4.4 Discussion Delay MERR Road Construction Project II C Surabaya

Based on the results obtained from the questionnaires and the data, delays MERR Road Construction Project II C Surabaya analyzed by comparing existing conditions based on the results of the questionnaire with existing secondary data. From the questionnaire results obtained main factors that cause delays of materials, labor and equipment is a matter of mobilization and availability. This is when compared to the secondary data based on the results of monitoring, data showed that up to 14 days of work after ditandatanganinya contract implementation, kontraktor not able to meet the target. Based on the results of monitoring the realization of the work and mobilization of equipment as outlined in the results of the evaluation of evidence meeting the Show Cause Meeting (SCM), obtained by the realization of which is able to be achieved in the first week only 4.490% and the second week of 1,433%, so the realization is reached until the end of the period of proof only 5.923 % of the planned target of 23.030%, so that delays progress is still quite high, namely: -26.461% of the planned 61.277%, 34.816% realization. Contractors late in the mobilization of equipment, materials and manpower according the agreed time. This is due to the unpreparedness of the contractor to meet the conditions agreed in the contract. Results of the project kerlambatan factor analysis based on the analysis of primary data from questionnaires and secondary data obtained can be seen in Table 4.10.

Faktor Keterlambatan (Data Primer)			Data Sekunder
Faktor Utama	Sub Faktor	Prosentase	
Bahan (Material)	Perubahan Bahan	5	Hasil Show Cause Meeting tidak tercapai karena Volume bahan yang terkirim tidak terpenuhi
	Mobilisasi Bahan	85	
	Kualitas Bahan	10	
Tenaga Kerja (Manpower)	Ketersediaan Tenaga Kerja	75	Hasil Show Cause Meeting tidak tercapai karena kebutuhan pekerja tidak terpenuhi
	Keahlian Tenaga Kerja	20	
	Penggantian Tenaga Kerja	5	
Peralatan (Equipment)	Kerusakan Peralatan	10	Hasil Show Cause Meeting tidak tercapai karena kebutuhan peralatan tidak terpenuhi
	Kekurangan Peralatan	70	
	Mobilisasi Peralatan	20	
Keuangan (Financial)	Cash Flow Keuangan Kontraktor	80	Keterlambatan pengiriman bahan, alat dan tenaga kerja karena cash flow kontraktor tidak lancar
	Pembayaran Pihak Owner	5	
	Perubahan Harga Barang	15	
Karateristik Tempat (Site Characteristic)	Kondisi Topografi Proyek	60	Kondisi topografi tidak terlalu berpengaruh terhadap keterlambatan
	Kondisi Lingkungan Proyek	15	
	Aksesibilitas Proyek	25	
Manajerial (Managerial)	Pengawasan Proyek	20	Kualitas pengontrolan tidak terlalu berpengaruh terhadap keterlambatan
	Kualitas Pengontrolan Pekerjaan	70	
	Perubahan Desain	10	
Faktor-faktor Lainnya (Other Factors)	Gangguan Intensitas Hujan	10	Keterlambatan pengiriman bahan, alat dan tenaga kerja karena cash flow kontraktor tidak lancar (harga satuan penawaran < Harga pasar)
	Harga Penawaran < 80% HPS	85	
	Kecelakaan Kerja	5	

4.5 Efforts to Minimize Delay MERR Road Construction Project II C Surabaya

From the analysis of primary data and secondary data, it can be pursued how to minimize delays in the project based on each of the main factors causing delays in the project. Efforts to minimize delays in the project based on each of the main factors causing delays in the project can be seen in Table 4:42.

Faktor Keterlambatan (Data Primer)			Data Sekunder
Faktor Utama	Sub Faktor	Prosentase	
Bahan (Material)	Perubahan Bahan	5	Perlunya klarifikasi mengenai kesiapan bahan baik dari segi kualitas, kuantitas dan kemudahan mobilisasi bahan, untuk menghindari masalah keterlambatan mobilisasi bahan
	Mobilisasi Bahan	85	
	Kualitas Bahan	10	
Tenaga Kerja (Manpower)	Ketersediaan Tenaga Kerja	75	Perlunya klarifikasi mengenai kesiapan tenaga kerja baik dari segi jumlah, keahlian dan mobilisasi tenaga kerja, untuk menghindari masalah keterlambatan akibat tenaga kerja
	Keahlian Tenaga Kerja	20	
	Penggantian Tenaga Kerja	5	
Peralatan (Equipment)	Kerusakan Peralatan	10	Perlunya klarifikasi mengenai kesiapan peralatan baik dari jumlah, jenis dan kemudahan mobilisasi peralatan, untuk menghindari masalah keterlambatan mobilisasi peralatan
	Kekurangan Peralatan	70	
	Mobilisasi Peralatan	20	
Keuangan (Financial)	Cash Flow Keuangan Kontraktor	80	Adanya klarifikasi mengenai kemampuan keuangan kontraktor, untuk menghindari masalah Cash Flow keuangan
	Pembayaran Pihak Owner	5	
	Perubahan Harga Barang	15	
Karateristik Tempat (Site Characteristic)	Kondisi Topografi Proyek	60	Tidak ada masalah yang dapat menyebabkan keterlambatan proyek akibat karateristik tempat
	Kondisi Lingkungan Proyek	15	
	Aksesibilitas Proyek	25	
Manajerial (Managerial)	Pengawasan Proyek	20	Pengontrolan kualitas pekerjaan dilakukan setiap saat dengan cara monitoring
	Kualitas Pengontrolan Pekerjaan	70	
	Perubahan Desain	10	
Faktor-faktor Lainnya (Other Factors)	Gangguan Intensitas Hujan	10	Pemilihan pemenang tender tidak hanya didasarkan pada penawaran nilai terendah
	Harga Penawaran < 80% HPS	85	
	Kecelakaan Kerja	5	

5. Conclusions And Recommendations

5.1 Conclusions

Based on the analysis of primary and secondary data, the main factors that cause project delay are 1) Availability of materials; 2) Labor; 3) Equipment; 4) Cash Flow Contractor / availability of funds' 5) Offer Price Low <80% HPS. Low bid price led to the availability of funds is insufficient to meet the needs of materials, equipment and manpower due to the market price> on the unit price bid.

5.2 Recommendations

As a continuation of the conclusion of the delay MERR II C Road Construction Phase II, it can be given suggestions are as follows:

- 1) Because MERR Road Development II C along the 6.5 Km continues to arrive in 2013, then in order to avoid delays in implementation at a later date Bid Committee is expected to be more selective in choosing candidates for the winning bidder to offer kususnya contractor whose value <80% of HPS (estimate Alone).
- 2) At the time of clarification materials and equipment to be more careful and check back with the supplier / owner of the equipment.
- 3) Control and controlling the use of advances given to contractors that are not used for other project costs.

5. References

- [1] Ang & Tang, Alfredo H-S & Wilson H (1975), *Konsep-konsep Probabilitas Dalam Perencanaan dan Perancangan Rekayasa*, Erlangga.
- [2] Cochran, William G (1953), *Sampling Techniques Modern Asia Edition*, Japan.