Analysis of the Impact of Development Infrastructure Development on Settlement Communities
(Case Study of Jalan Pasar Nambangan, Kenjeran, Surabaya)

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ABSTRACT

The impact of the development of Infrastructure development on the Community of Settlement Areas on Jalan Pasar Nambangan, Kenjeran, Surabaya needs to be evaluated on 700 meters of Roads and Channels that have been installed in the location and sought the satisfaction of the local community after the construction of the Infrastructure. By using several methods including looking for quality paving, analyzing rainfall using the Log Person III method, and Seeking Community Satisfaction as a benchmark of this researcher, where the results of each analysis with optimal results, where the Road in the form of Paving blocks using concrete quality I with the crushed voltage is 38.22 MPa which will have an impact on the life of the road and in the good category, then for the channel produce a comparison of Q Channels with Q Plan 0.104237837 m3 / sec: 0.051493258 m3 / sec, which (channel conditions are safe or able to accept Q Plan) which will later has an impact on channel capacity in the next 10 years and the last of the 75 Community Respondents shows 54.22% Very Satisfied from the existence of the Infrastructure which has a good impact to support activities in the daily lives of the community.

Keywords: Settlement Area Infrastructure, Road and Channel Infrastructure, Community Satisfaction

INTRODUCTION

Infrastructure is a basic necessity as the operation of daily activities in order to be smooth and optimal, can be roads, canals, clean water, public services, electricity, public buildings can be (terminals, ports, airports, train stations) in this case will also be able to support the economic aspect of the community as a subject through or using the infrastructure.

Not forgetting also Infrastructure is the responsibility of the local government which is to smooth public activities as a uniform regional development planning system and all can feel the development. The infrastructure to be discussed here includes roads, channels, and environments facilitated by the road and the channel.

With the passage of time and progress in this age, it is undeniable that life in the community is also increasing, in terms of household needs, access to mobilization in activities, the feasibility of living in the environment includes cleanliness and development of adequate infrastructure in the community.

The life of the people on Jalan Pasar Nambangan, Kenjeran, Surabaya also requires the development of adequate infrastructure for all activities, the lives of residents here more or less work as fishermen or fish sellers, with the location on the coast of Surabaya in the northern part clearly obviously directly on the sea.

Most of the residents on Jalan Pasar Nambangan, Kenjeran, Surabaya lack healthy living behavior by removing garbage in the canal can inhibit the flow of water that leads to the main / tertiary disposal of the sea as a final disposal, and in this location previously there was no infrastructure on the main road access with road conditions in the form of land, with a road length of approximately 700 meters and with the width of the existing conditions in the field approximately 3 meters along with channels with a channel width of 50 centimeters.

In this research, it will be discussed as a formulation of the problem, namely what has affected the community after the Infrastructure Development in the form of Roads? What has affected the community after the Infrastructure Development in the form of a Channel? What is the community's response to the Infrastructure Development in the form of Roads and Channels?

With the limitation of the problem, namely Analyzing Infrastructure in the form of existing exiting road to community behavior, Analyzing Infrastructure in the form of existing exiting channels to community behavior, The influence of community behavior on the environment after the infrastructure in the form of roads and channels.

LITERATURE REVIEW

On the basis of this Theory discusses the method or method used in this study includes the study and also calculations related to the subject being researched which will present a summary of the theories taken from previous research sources can come from Journals, Guidebooks and SNI Books.

In this study where the theoretical foundation is about infrastructure, there are 2 things, namely in the form of roads and channels, and there is one study that also discusses community satisfaction with infrastructure, then there will be 3 theories taken, namely Road Analysis in the form of paving and water absorption, Analysis of this Channel to analyze Rainfall using type III Log Person method, Chi Square Test, Flowing Coefficient (C), Planning of domestic wastewater discharge (Qak), then the third theory is to calculate the

Community Satisfaction Index (IKM). For discussion of the theories used are as follows;

The first is the road analysis (Quality of paving blocks) with sources originating from (*Anita Christine Sembiring,2017, Uji Kuat Tekan Dan Serapan Air Pada Paving Block dengan Bahan Pasir Kasar, Batu Kacang, dan Pasir Halus*).
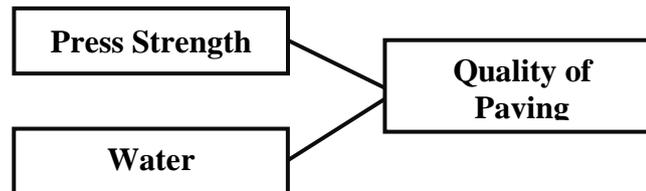
Paving Block press test is calculated using the formula:

$$P = \frac{F}{A} \ \& \ absorption = \frac{Mb - Mk}{Mk} \, x \, 100\%$$

then then discuss channel analysis (Rainfall Analysis), with the following discussion;

Calculates the average daily rainfall in the form of logarithms

$$Log \ x = \frac{\sum_{t=1}^{n} Log \ xi}{n}$$

Calculates the standard deviation value that occurs (Sx)

$$sx = \sqrt{\frac{\sum_{t=1}^{n} Log \ xi - Log \ x}{(n-1)}}$$

Calculate the coefficient of tension (Cs)

$$Cs = \frac{\sum_{t=1}^{n}(Log \ xi - Log \ x)^3}{(n-1)(n-2)Sx^3}$$

Calculates rainfall logarithms for 2 years return period:

Log RTr =Log x + G x Sx **and** $RTr = 10^{Log \ RTr}$

Flowing Coefficient (C)

$$Cm = \frac{\sum_{i=1}^{n} Ai.Ci}{\sum_{i=1}^{n} Ai}$$

Calculation of Rainwater Discharge (Qah)

$Q = \frac{1}{36} \, x \, C \, x \, I \, x \, A \ and \ \boldsymbol{Qak \ Total} = \frac{P_n \times 80\% \times K_{ab}}{A_{total}}$ **and** Qak = Qak total x A asal

then to know the feasibility of the calculation are as follows;

Q channel capacity: Q Plan

Where it is said to be feasible is **Q channel capacity> Q Plan**,then said to be inadequate **Q channel capacity <Q Plan**,
To analyze community satisfaction using the valuation index

Nilai Persepsi	Nilai Interval IKM			Nilai Interval Konversensi IKM			Mutu Pelayanan	Penilaia Kinerja
1	1.00	-	1.72	25	-	39.2	D	Tidak Puas
2	1.82	-	2.54	40.2	-	54.4	C	Kurang Puas
3	2.64	-	3.36	55.4	-	69.6	BC	Cukup Puas
4	3.46	-	4.18	70.6	-	84.8	B	Puas
5	4.28	-	5.00	85.8	-	100	A	Sangat Puas

By calculating the percentage of each index:

$$\frac{Qty\ Kinerja}{Total\ Qty\ Kinerja} x\ 100\%$$

METHOD

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              │  Field Preparation / Study │
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              │    Research purposes      │
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   /  Secondary Data:      /  /  Primary data :       /
   /  - Rainfall           /  /  - Community          /
   /  - Flood data         /  /    Satisfaction       /
   /  - Paving Press Test  /  /    Interview          /
   /    Results            /  /  - Location           /
   /  - Asbuilt drawing    /  /    measurement        /
   /  - Road Elevation     /  /    (length and width  /
   /    Data               /  /    of road and        /
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   / Method Determination: /  / Method Determination: /
   / - Calculation of      /  / - Discussion and      /
   /   Rainfall            /  /   Analysis of         /
   / - Calculation of      /  /   Questionnaires      /
   /   water runoff        /  / - IKM Method          /
   / - Strong calculation  /  /   (Community          /
   /   of paving press     /  /   Satisfaction Index) /
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   /   Paving Quality      /             │
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              │ - Evaluating the results  │
              │   of the questionnaire    │
              │ - Evaluate the impact on  │
              │   the road                │
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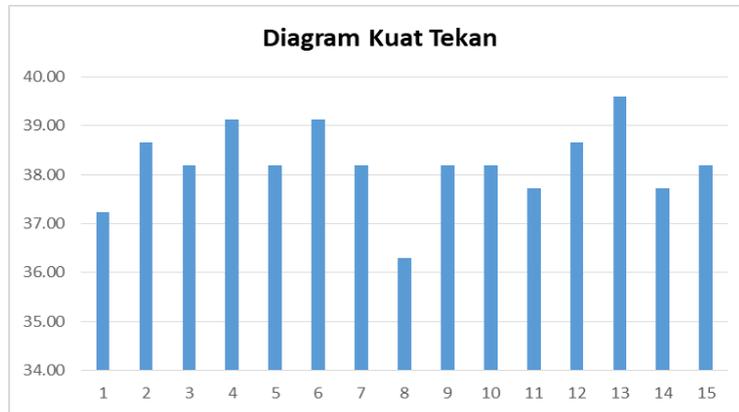
DISCUSSION

ROAD RESEARCH

Diagram Kuat Tekan

This road research is in the form of composite Pavement (composit pavement), there are 2 parts of the first calculation using Secondary data, this secondary data is data from laboratory tests, there are 2 tests of paving compressive strength and water absorption / wear paving resistance;

Then with the results of each sampling and press test results

From the results of the above discussion, the overall results of Paving have concrete quality I with a value of fc average = **38.22 MPa** and the 13th sample shows the highest value that is = **39.60 MPa** then with the lowest result at Sample 8 which is **36.30 Mpa**

With the results of the calculation of Absorptive Power it produces absorbency below 1% with the meaning that it is low absorption

NO	Mk / dry mass of the test object (gr)	Mb = wet mass of the test object (gr)	Water Absorption (%)
1	3071.400	3350.897	0.083
2	3085.700	3378.842	0.087
3	3028.000	3300.520	0.083
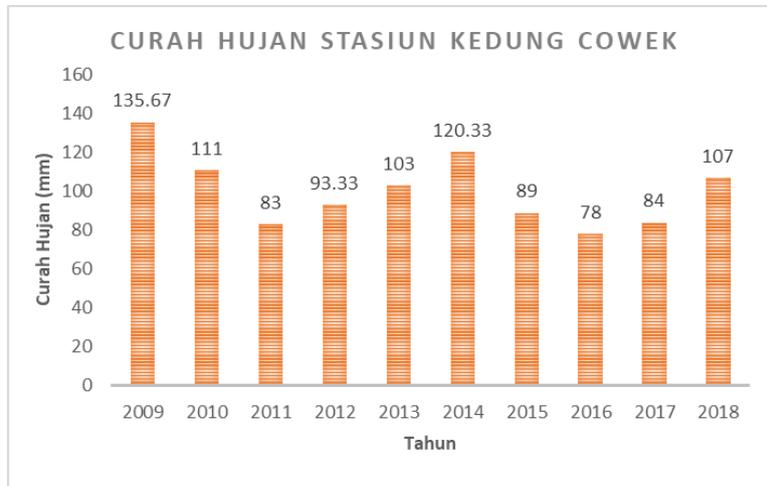
CHANNEL RESEARCH

In this channel research using 2009 - 2018 annual rainfall data with the closest rainfall station is Kedung cowek station,

This calculation method uses log person III which produces rainfall when 2 years Log
RTr = *1.996042069*
RTr = *99,093 mm*

With Chi squared yielding Dk = **2** and probability of **5%**, the value of X2cr = **5.991** is obtained. Where X2hit = **4**, then X2hit <X2cr. Then with the results of calculations from Q Design or Design Debit = **0.051493258 m3 / sec**, then with the calculation of Channel Capacity = **0.104237837 m3 / sec**, then *Q channel capacity> Q Plans* can be concluded *(Channel conditions are safe or able to accept Q Plan)*

Perception Value	Performance Assessment	Cumulative Total	Division of Everyone	Information
1	Not satisfied	0	0.00	
2	Less satisfied	47	2.24	
3	Quite satisfied	82	3.90	
4	Satisfied	595	28.33	
5	Very satisfied	854	40.67	
Total Responden			**75.00**	People

COMMUNITY SATISFACTION CALCULATIONS

With a total of 75 respondents, and present 21 questions and 5 performance appraisals as satisfaction indexes that will be selected and assessed by the community as a measure of satisfaction, with cumulative results;

Then from these results a percentage of the overall results of the community satisfaction survey can be made, which results in a percentage.

So with the above percentage results, you can see the results of the questionnaire of the Community Satisfaction Index 54% Very Satisfied with the construction of Road Infrastructure and Channels.

Diagram Rata-Rata Kumulatif

PROSENTASE KEPUASAN MASYARAKAT
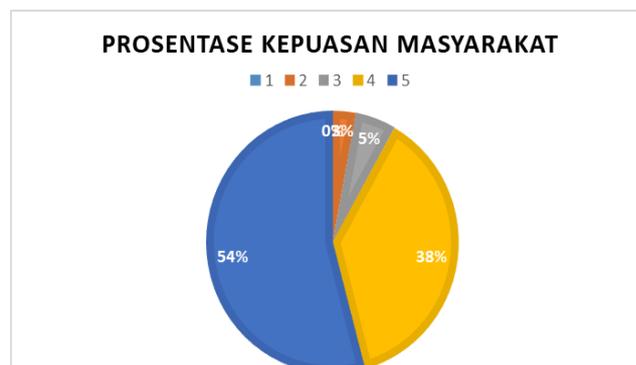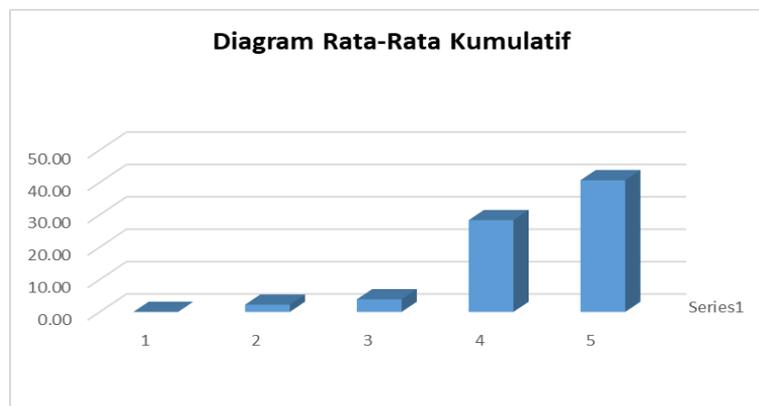
CONCLUSION

With the paving press test results with an average crushed voltage = 38.22 Mpa, and can be converted to SNI table Figure 4.2.3 (Paving Quality Pictures, can show Paving Blocks with concrete quality I, it can be categorized as feasible with high concrete quality.

Then with the test results of the absorption of Paving Block water with an average yield = 0.084%, it can be categorized with low absorption, and can also be said to be feasible because low absorption will affect the age of the road. So these results will have a good impact on the community because the age of the road can last long in the next 5-10 years.

For the Hydrological analysis of existing Existing channels and with the calculation of type III Log Person Method with 10 years of rain data, a comparison of Q Channels with Plan Q 0.104237837 m3 / sec: 0.051493258 m3 / sec, which (Channel conditions are safe or able to accept Q Plan) From the results of this Hydrological Analysis, the capacity of the channel is feasible within the next 10 years with tamping power volume greater than Q channel.

Community Satisfaction Survey on Infrastructure in the form of roads and channels, with respondents 75 people, where with the results Percentage, Not satisfied = 0%, Satisfied Less = 2.98%, Quite satisfied = 5.21%, Satisfied = 37.78%, and Very Satisfied = 54.22% . it can be concluded that the average local community is very satisfied with the existing road infrastructure and channels.

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