

**PART-E      ECONOMIC AND FINANCIAL  
EVALUATION**

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SP/R : Supporting Report

M/R : Main Report

## **PART-E ECONOMIC AND FINANCIAL EVALUATION**

### **E2 Economic Evaluation**

#### **E2.4 Calculation of Cost**

Table S/R-E2-1 Cost for Economic Analysis (1/4)

(1) Cost for Economic Analysis (Short-term & Medium-term plan) (Market price-based)

1) Cost for Sewerage Development Plan

(Market price-based)

Unit : Million IDR

Unit : Million IDR

Items	Currency	Short-term		Medium-term				Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
		Zone No.1	Zone No.6	Zone No.4	Zone No.5	Zone No.8	Zone No.10																			
<b>Construction Cost for Sewerage Development Plan</b>																										
A. Construction Cost	Local currency	3,252,676	4,508,110	474,946	2,440,893	3,337,548	5,036,646	19,050,820	1,185,704	605,435	1,278,966	681,675	1,278,966	605,435	922,629	385,740	491,442	755,928	1,072,144	1,378,230	1,391,954	1,744,058	1,202,417	1,680,047	770,491	148,858
	Foreign currency	1,874,747	2,415,296	45,292	957,920	1,282,969	2,290,931	8,867,156	583,343	187,777	583,343	232,553	583,343	187,777	374,066	101,761	233,852	270,118	313,610	391,815	382,357	590,956	172,377	550,826	108,304	0
a. Direct Construction Cost	Local currency	2,878,474	3,989,478	420,306	2,160,082	2,953,583	4,457,209	16,859,132	1,049,296	535,783	1,131,828	603,252	1,131,828	535,783	816,486	341,363	434,905	668,963	948,800	1,219,672	1,231,817	1,543,414	1,064,086	1,486,767	681,850	131,733
	Foreign currency	1,659,068	2,137,430	40,082	847,717	1,135,371	2,027,373	7,847,041	516,233	166,174	516,233	205,799	516,233	166,174	331,032	90,054	206,948	239,043	277,531	346,739	338,369	522,970	152,546	487,457	95,844	0
(1)House Connection	Local currency	361,275	464,054	75,824	252,490	332,536	497,467	1,983,646	0	82,533	82,533	82,533	82,533	82,533	82,533	82,533	82,533	123,988	69,510	106,458	106,458	106,458	131,733	131,733	131,733	0
	Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(2)Collection Sewer Line	Local currency	1,360,943	2,070,637	344,482	1,176,346	1,602,508	2,264,259	8,819,175	453,250	453,250	453,250	453,250	453,250	453,250	258,830	0	283,032	518,302	785,386	785,386	785,386	957,627	722,358	550,117	0	0
	Foreign currency	532,844	720,430	40,082	183,305	209,924	486,854	2,173,439	166,174	166,174	166,174	166,174	166,174	166,174	90,054	0	60,857	97,518	132,505	132,505	132,505	152,546	115,885	95,844	0	0
(3)Lift Pump Station	Local currency	0	67,469	0	12,405	21,559	26,205	127,638	0	0	0	67,469	0	0	0	0	0	26,205	12,405	21,559	0	0	0	0	0	0
	Foreign currency	0	39,625	0	7,285	12,661	15,390	74,962	0	0	0	39,625	0	0	0	0	0	15,390	7,285	12,661	0	0	0	0	0	0
(4)Wastewater Treatment Plant	Local currency	946,028	1,122,811	0	606,796	840,914	1,409,486	4,926,036	596,046	0	596,046	0	596,046	0	280,703	0	352,372	303,398	280,305	352,372	303,398	632,676	0	632,676	0	0
	Foreign currency	555,604	659,429	0	356,372	493,870	827,794	2,893,068	350,058	0	350,058	0	350,058	0	164,857	0	206,948	178,186	164,623	206,948	178,186	371,572	0	371,572	0	0
(5)Facilities Replacement (from 2014 to 2050)	Local currency	210,228	264,507	0	112,046	156,066	259,792	1,002,639	0	0	0	0	0	0	0	0	0	0	0	0	15,016	18,893	0	0	0	0
	Foreign currency	570,620	717,947	0	300,755	418,915	697,336	2,705,572	0	0	0	0	0	0	0	0	0	0	0	0	15,016	18,893	0	0	0	0
b. Indirect Construction Cost	Local currency	374,202	518,632	54,640	280,811	383,966	579,437	2,191,687	136,408	69,652	147,138	78,423	147,138	69,652	106,143	44,377	56,538	86,965	123,344	158,557	160,136	200,644	138,331	193,280	88,641	17,125
	Foreign currency	215,679	277,866	5,211	110,203	147,598	263,558	1,020,115	67,110	21,603	67,110	26,754	67,110	21,603	43,034	11,707	26,903	31,076	36,079	45,076	43,988	67,986	19,831	63,369	12,460	0
B. Engineering Cost	Local currency	201,493	279,263	29,421	151,206	206,751	312,005	1,180,139	73,451	37,505	79,228	42,228	79,228	37,505	57,154	23,895	30,443	46,827	66,416	85,377	86,227	108,039	74,486	104,074	47,730	9,221
	Foreign currency	116,135	149,620	2,806	59,340	79,476	141,916	549,293	36,136	11,632	36,136	14,406	36,136	11,632	23,172	6,304	14,486	16,733	19,427	24,272	23,686	36,608	10,678	34,122	6,709	0
C. Physical Contingency	Local currency	162,634	225,406	23,747	122,045	166,877	251,832	952,541	59,285	30,272	63,948	34,084	63,948	30,272	46,131	19,287	24,572	37,796	53,607	68,911	69,598	87,203	60,121	84,002	38,525	7,443
	Foreign currency	93,737	120,765	2,265	47,896	64,148	114,547	443,358	29,167	9,389	29,167	11,628	29,167	9,389	18,703	5,088	11,693	13,506	15,680	19,591	19,118	29,548	8,619	27,541	5,415	0
D. Land Use Cost	Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (excluding Value Added Tax)	Local currency	3,616,803	5,012,779	528,115	2,714,144	3,711,177	5,600,482	21,183,500	1,318,440	673,211	1,422,142	757,986	1,422,142	673,211	1,025,914	428,922	546,458	840,552	1,192,167	1,532,518	1,547,779	1,939,300	1,337,024	1,868,123	856,745	165,523
	Foreign currency	2,084,619	2,685,681	50,363	1,065,156	1,426,594	2,547,394	9,859,807	648,647	208,798	648,647	258,587	648,647	208,798	415,941	113,152	260,031	300,357	348,718	435,677	425,160	657,112	191,674	612,489	120,428	0
<b>O&amp;M Cost for Sewerage Development Plan (Annual)</b>																										
	Local currency	113,587	139,578	26,498	74,104	102,484	144,808	15,513,998	0	25,316	50,633	75,949	101,266	126,582	151,898	177,215	202,531	227,848	263,328	281,725	311,509	341,294	371,078	409,696	448,313	486,930
Total (excluding Value Added Tax)	Local currency	-	-	-	-	-	-	36,697,497	1,318,440	698,528	1,472,775	833,935	1,523,408	799,793	1,177,813	606,137	748,989	1,068,400	1,455,495	1,814,243	1,859,288	2,280,594	1,708,102	2,277,819	1,305,057	652,453
	Foreign currency	-	-	-	-	-	-	9,859,807	648,647	208,798	648,647	258,587	648,647	208,798	415,941	113,152	260,031	300,357	348,718	435,677	425,160	657,112	191,674	612,489	120,428	0
<b>Costs for Sewerage Development Plan</b>																										
		-	-	-	-	-	-	46,557,304	1,967,086	907,326	2,121,422	1,092,522	2,172,055	1,008,591	1,593,754	719,289	1,009,019	1,368,757	1,804,212	2,249,921	2,284,449	2,937,706	1,899,776	2,890,308	1,425,485	652,453

2) Cost for On-site STPs Development Plans

(Market price-based)

Unit : Million IDR

Unit : Million IDR

Items	Currency	1. On-site STP Development Plan		2. Integration Plan for Off-site WWTP and On-site STP		3. Co-treatment Plan of On-site sludge at Off-site WWTPs		Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
		Construction of a new STP in South area	(1) Duri Kosambi	(2) Pulo Gebang	Zone 1 / Zone 5 / Zone 8																						
<b>Construction Cost for On-site STPs Development Plan</b>																											
A. Construction Cost	Local currency	21,363	99,902	186,360	186,565	414,190	167,343	9,802	0	0	0	0	0	0	0	0	40,642	40,642	37,993	49,357	2,157	0	0	0	0	0	0
	Foreign currency	29,633	93,064	95,790	167,315	385,801	104,599	7,408	0	0	0	0	0	0	0	0	23,516	23,516	20,514	28,520	0	0	0	0	0	0	0
a. Direct Construction Cost	Local currency	18,905	88,409	94,124	165,102	366,540	148,091	8,674	0	0	0	0	0	0	0	0	35,966	35,966	33,622	43,679	1,909	0	0	0	0	0	
	Foreign currency	26,224	82,357	84,770	148,066	341,417	92,565	6,556	0	0	0	0	0	0	0	0	20,811	20,811	18,154	25,239	0	0	0	0	0	0	
(1) STPs	Local currency	17,348	71,168	79,728	135,448	303,692	148,091	8,674	0	0	0	0	0	0	0	0	35,966	35,966	31,375	43,619	0	0	0	0	0	0	
	Foreign currency	13,112	41,179	51,472	78,372	184,135	92,565	6,556	0	0	0	0	0	0	0	0	20,811	20,811	18,154	25,239	0	0	0	0	0	0	
(2)Facilities Replacement (from 2013 to 2050)	Local currency	1,557	17,241	14,396	62,848	0	0	0	0	0	0	0	0	0	0	0	0	0	2,247	60	1,909	0	0	0	0	0	
	Foreign currency	13,112	41,179	33,297	69,694	157,282	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b. Indirect Construction Cost	Local currency	2,458	11,493	12,236	21,463	47,650	19,252	1,128	0	0	0	0	0	0	0	0	4,676	4,676	4,371	5,678	248	0	0	0	0		

Table S/R-E2-1 Cost for Economic Analysis (2/4)

(2) Cost for Economic Analysis (Short-term & Medium-term plan) (Economic price-based)

1) Cost for Sewerage Development Plan

Economic value = Market price × SER(Shadow Exchange Rate) [Foreign currency applicable only]

\*SER(Shadow Exchange Rate) = 1.1

(Economic value-based)

Unit : Million IDR

Unit : Million IDR

Items	Currency	Short-term		Medium-term				Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
		Zone 1	Zone 6	Zone 4	Zone 5	Zone 8	Zone 10																				
<b>Construction Cost for Sewerage Development Plan</b>																											
A. Construction Cost	Local currency	3,252,676	4,508,110	474,946	2,440,893	3,337,548	5,036,646	19,050,820	1,185,704	605,435	1,278,966	681,675	1,278,966	605,435	922,629	385,740	491,442	755,928	1,072,144	1,378,230	1,391,954	1,744,058	1,202,417	1,680,047	770,491	148,858	
	Foreign currency	2,062,222	2,656,826	49,822	1,053,712	1,411,266	2,520,024	9,753,872	641,677	206,555	641,677	255,808	641,677	206,555	411,472	111,937	257,237	297,130	344,971	430,996	420,593	650,052	189,615	605,909	119,134	0	
a. Direct Construction Cost	Local currency	2,878,474	3,989,478	420,306	2,160,082	2,953,583	4,457,209	16,859,132	1,049,296	535,783	1,131,828	603,252	1,131,828	535,783	816,486	341,363	434,905	668,963	948,800	1,219,672	1,231,817	1,543,414	1,064,086	1,486,767	681,850	131,733	
	Foreign currency	1,824,975	2,351,173	44,090	932,489	1,248,908	2,230,110	8,631,745	567,856	182,792	567,856	226,379	567,856	182,792	364,135	99,059	227,643	262,947	305,284	381,413	372,206	575,267	167,801	536,202	105,428	0	
(1)House Conection	Local currency	361,275	464,054	75,824	252,490	332,536	497,467	1,983,646	0	82,533	82,533	82,533	82,533	82,533	82,533	82,533	82,533	82,533	123,988	69,510	106,458	106,458	131,733	131,733	131,733	0	
	Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
(2)Collection Sewer Line	Local currency	1,360,943	2,070,637	344,482	1,176,346	1,602,508	2,264,259	8,819,175	453,250	453,250	453,250	453,250	453,250	453,250	258,830	0	283,032	518,302	785,386	785,386	785,386	957,627	722,358	550,117	0		
	Foreign currency	586,129	792,473	44,090	201,635	230,917	535,539	2,390,782	182,792	182,792	182,792	182,792	182,792	182,792	99,059	0	66,942	107,269	145,756	145,756	145,756	167,801	127,473	105,428	0		
(3)Lift Pump Station	Local currency	0	67,469	0	12,405	21,559	26,205	127,638	0	0	0	67,469	0	0	0	0	0	0	26,205	12,405	21,559	0	0	0	0	0	
	Foreign currency	0	43,587	0	8,014	13,928	16,929	82,458	0	0	0	43,587	0	0	0	0	0	0	16,929	8,014	13,928	0	0	0	0	0	
(4)Wastewater Treatment Plant	Local currency	946,028	1,122,811	0	606,796	840,914	1,409,486	4,926,036	596,046	0	596,046	0	596,046	0	280,703	0	352,372	303,398	280,305	352,372	303,398	632,676	0	632,676	0	0	
	Foreign currency	611,164	725,372	0	392,009	543,257	910,573	3,182,375	385,064	0	385,064	0	385,064	0	181,343	0	227,643	196,005	181,086	227,643	196,005	408,729	0	408,729	0	0	
(5)Facilities Replacement (from 2014 to 2050)	Local currency	210,228	264,507	0	112,046	156,066	259,792	1,002,639	0	0	0	0	0	0	0	0	0	0	0	0	15,016	18,893	0	0	0	0	
	Foreign currency	627,682	789,742	0	330,830	460,807	767,069	2,976,130	0	0	0	0	0	0	0	0	0	0	0	0	16,518	20,783	0	0	0	0	
b. Indirect Construction Cost	Local currency	374,202	518,632	54,640	280,811	383,966	579,437	2,191,687	136,408	69,652	147,138	78,423	147,138	69,652	106,143	44,377	56,538	86,965	123,344	158,557	160,136	200,644	138,331	193,280	88,641	17,125	
	Foreign currency	237,247	305,653	5,732	121,224	162,358	289,914	1,122,127	73,821	23,763	73,821	29,429	73,821	23,763	47,338	12,878	29,594	34,183	39,687	49,584	48,387	74,785	21,814	69,706	13,706	0	
B. Engineering Cost	Local currency	201,493	279,263	29,421	151,206	206,751	312,005	1,180,139	73,451	37,505	79,228	42,228	79,228	37,505	57,154	23,895	30,443	46,827	66,416	85,377	86,227	108,039	74,486	104,074	47,730	9,221	
	Foreign currency	127,748	164,582	3,086	65,274	87,424	156,108	604,222	39,750	12,795	39,750	15,847	39,750	12,795	25,489	6,934	15,935	18,406	21,370	26,699	26,054	40,269	11,746	37,534	7,380	0	
C. Physical Contingency	Local currency	162,634	225,406	23,747	122,045	166,877	251,832	952,541	59,285	30,272	63,948	34,084	63,948	30,272	46,131	19,287	24,572	37,796	53,607	68,911	69,598	87,203	60,121	84,002	38,525	7,443	
	Foreign currency	103,111	132,841	2,491	52,686	70,563	126,001	487,694	32,084	10,328	32,084	12,790	32,084	10,328	20,574	5,597	12,862	14,857	17,249	21,550	21,030	32,503	9,481	30,295	5,957	0	
D. Land Use Cost	Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total (excluding Value Added Tax)	Local currency	3,616,803	5,012,779	528,115	2,714,144	3,711,177	5,600,482	21,183,500	1,318,440	673,211	1,422,142	757,986	1,422,142	673,211	1,025,914	428,922	546,458	840,552	1,192,167	1,532,518	1,547,779	1,939,300	1,337,024	1,868,123	856,745	165,523	
	Foreign currency	2,293,081	2,954,249	55,399	1,171,672	1,569,253	2,802,133	10,845,788	713,511	229,678	713,511	284,445	713,511	229,678	457,535	124,468	286,034	330,393	383,589	479,245	467,677	722,823	210,841	673,738	132,471	0	
<b>O&amp;M Cost for Sewerage Development Plan (Annual)</b>		Local currency	113,587	139,578	26,498	74,104	102,484	144,808	15,513,998	0	25,316	50,633	75,949	101,266	126,582	151,898	177,215	202,531	227,848	263,328	281,725	311,509	341,294	371,078	409,696	448,313	486,930
Total (excluding Value Added Tax)	Local currency	-	-	-	-	-	-	36,697,497	1,318,440	698,528	1,472,775	833,935	1,523,408	799,793	1,177,813	606,137	748,989	1,068,400	1,455,495	1,814,243	1,859,288	2,280,594	1,708,102	2,277,819	1,305,057	652,453	
	Foreign currency	-	-	-	-	-	-	10,845,788	713,511	229,678	713,511	284,445	713,511	229,678	457,535	124,468	286,034	330,393	383,589	479,245	467,677	722,823	210,841	673,738	132,471	0	
<b>Costs for Sewerage Development Plan</b>		-	-	-	-	-	-	47,543,285	2,031,951	928,206	2,186,286	1,118,381	2,236,919	1,029,471	1,635,348	730,605	1,035,022	1,398,793	1,839,084	2,293,488	2,326,965	3,003,417	1,918,943	2,951,557	1,437,528	652,453	

2) Cost for On-site STPs Development Plans

(Economic value-based)

Unit : Million IDR

Unit : Million IDR

Items	Currency	1. On-site STP Development Plan	2. Integration Plan for Off-site WWTP and On-site STP		3. Co-treatment Plan of On-site sludge at Off-site WWTPs	Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
			(1) Duri Kosambi	(2) Pulo Gebang																					Zone 1 / Zone 5 / Zone 8
<b>Construction Cost for On-site STPs Development Plan</b>																									
A. Construction Cost	Local currency	21,363	99,902	106,360	186,565	670,232	167,343	9,802	0	0	0	0	0	0	40,642	40,642	37,993	49,357	2,157	0	0	0	0	0	0
	Foreign currency	32,596	102,370	105,369	184,046	578,108	115,059	8,149	0	0	0	0	0	0	25,868	25,868	22,565	31,372	0	0	0	0	0	0	0
a. Direct Construction Cost	Local currency	18,905	88,409	94,124	165,102	366,540	148,091	8,674	0	0	0	0	0	0	35,966	35,966	33,622	43,679	1,909	0	0	0	0	0	0
	Foreign currency	28,846	90,593	93,247	162,873	375,559	101,822	7,211	0	0	0	0	0	0	22,892	22,892	19,969	27,762	0	0	0	0	0	0	0
(1) STPs	Local currency	17,348	71,168	79,728	135,448	303,692	148,091	8,674	0	0	0	0	0	0	35,966	35,966	31,375	43,619	0	0	0	0	0	0	0
	Foreign currency	14,423	45,297	56,620	86,210	202,549	101,822	7,211	0	0	0	0	0	0	22,892	22,892	19,969	27,762	0	0	0	0	0	0	0
(2)Facilities Replacement (from 2013 to 2050)	Local currency	1,557	17,241	14,396	29,654	62,848	0	0	0	0	0	0	0	0	0	0	2,247	60	1,909	0	0	0	0	0	0
	Foreign currency	14,423	45,297	36,627	76,663	173,010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
b. Indirect Construction Cost	Local currency	2,458	11,493	12,236	21,463	47,650	19,252	1,128	0	0	0	0	0	0	4,676	4,676	4,371	5,678	248	0	0	0	0	0	0
	Foreign currency	3,750	11,777</																						



Table S/R-E-2-1 Cost for Economic Analysis (4/4)

(2) Cost for Economic Analysis (Short-term & Medium-term plan) (Economic price-based)

1) Cost for Sewerage Development Plan

Economic value = Market price × SER(Shadow Exchange Rate) [Foreign currency applicable only]

\*SER(Shadow Exchange Rate) = 1.1

(Economic value-based)

Unit : Million IDR

Unit : Million IDR

Items	Currency	Short-term						Medium-term						Total	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050			
		Zone 1	Zone 6	Zone 4	Zone 5	Zone 8	Zone 10																														
<b>Construction Cost for Sewerage Development Plan</b>																																					
A. Construction Cost	Local currency	3,252,676	4,508,110	474,946	2,440,893	3,337,548	5,036,646	19,050,820	120,298	120,298	99,703	72,596	191,942	222,034	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Foreign currency	2,062,222	2,656,826	49,822	1,053,712	1,411,266	2,520,024	9,753,872	0	0	12,217	28,326	569,509	695,139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
a. Direct Construction Cost	Local currency	2,878,474	3,989,478	420,306	2,160,082	2,953,583	4,457,209	16,859,132	106,458	106,458	88,233	64,244	169,860	196,491	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Foreign currency	1,824,975	2,351,173	44,090	932,489	1,248,908	2,230,110	8,631,745	0	0	10,811	25,068	503,990	615,167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
(1)House Connection	Local currency	361,275	464,054	75,824	252,490	332,536	497,467	1,983,646	106,458	106,458	78,404	41,456	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
(2)Collection Sewer Line	Local currency	1,360,943	2,070,637	344,482	1,176,346	1,602,508	2,264,259	8,819,175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Foreign currency	586,129	792,473	44,090	201,635	230,917	535,539	2,390,782	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(3)Lift Pump Station	Local currency	0	67,469	0	12,405	21,559	26,205	127,638	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Foreign currency	0	43,587	0	8,014	13,928	16,929	82,458	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(4)Wastewater Treatment Plant	Local currency	946,028	1,122,811	0	606,796	840,914	1,409,486	4,926,036	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Foreign currency	611,164	725,372	0	392,009	543,257	910,573	3,182,375	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(5)Facilities Replacement (from 2014 to 2050)	Local currency	210,228	264,507	0	112,046	156,066	259,792	1,002,639	0	0	9,829	22,789	169,860	196,491	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Foreign currency	627,682	789,742	0	330,830	460,807	767,069	2,976,130	0	0	10,811	25,068	503,990	615,167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
b. Indirect Construction Cost	Local currency	374,202	518,632	54,640	280,811	383,966	579,437	2,191,687	13,840	13,840	11,470	8,352	22,082	25,544	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Foreign currency	237,247	305,653	5,732	121,224	162,358	289,914	1,122,127	0	0	1,405	3,259	65,519	79,972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Engineering Cost	Local currency	201,493	279,263	29,421	151,206	206,751	312,005	1,180,139	7,452	7,452	6,176	4,497	11,890	13,754	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Foreign currency	127,748	164,582	3,086	65,274	87,424	156,108	604,222	0	0	757	1,755	35,279	43,062	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Physical Contingency	Local currency	162,634	225,406	23,747	122,045	166,877	251,832	952,541	6,015	6,015	4,985	3,630	9,597	11,102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Foreign currency	103,111	132,841	2,491	52,686	70,563	126,001	487,694	0	0	611	1,416	28,475	34,757	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Land Use Cost	Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (excluding Value Added Tax)	Local currency	3,616,803	5,012,779	528,115	2,714,144	3,711,177	5,600,482	21,183,500	133,765	133,765	110,864	80,723	213,429	246,890	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Foreign currency	2,293,081	2,954,249	55,399	1,171,672	1,569,253	2,802,133	10,845,788	0	0	13,585	31,497	633,264	772,958	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>O&amp;M Cost for Sewerage Development Plan (Annual)</b>																																					
	Local currency	113,587	139,578	26,498	74,104	102,484	144,808	15,513,998	516,714	546,499	568,050	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213
	Foreign currency	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total (excluding Value Added Tax)	Local currency	-	-	-	-	-	-	36,697,497	650,479	680,264	678,914	658,936	791,642	825,104	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213
	Foreign currency	-	-	-	-	-	-	10,845,788	0	0	13,585	31,497	633,264	772,958	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Costs for Sewerage Development Plan</b>																																					
	Local currency	-	-	-	-	-	-	47,543,285	650,479	680,264	692,498	690,434	1,424,906	1,598,061	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213
	Foreign currency	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

2) Cost for On-site STPs Development Plans

(Economic value-based)

Unit : Million IDR

Unit : Million IDR

Items	Currency	1. On-site STP Development Plan		2. Integration Plan for Off-site WWTP and On-site STP		3. Co-treatment Plan of On-site sludge at Off-site WWTPs		Total	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050							
		Construction of a new STP in South area	(1) Duri Kosambi	(2) Pulo Gebang	Zone 1 / Zone 5 / Zone 8																														
<b>Construction Cost for On-site STPs Development Plan</b>																																			
A. Construction Cost	Local currency	21,363	99,902	106,360	186,565	670,232	0	2,566	14,674	1,353	13,071	0	0	0	0	0	0	0	0	0	13,701	9,365	338	11,186	0	0	0	0	0	0	0	0	0	0	0
	Foreign currency	32,596	102,370	105,369	184,046	578,108	0	40,948	13,038	34,784	0	0	0	0	0	0	0	0	0	0	41,388	28,289	3,260	33,793	0	0	0	0	0	0	0	0	0	0	0
a. Direct Construction Cost	Local currency	18,905	88,409	94,124	165,102	366,540	0	2,2																											



**Table S/R-E2-2 Calculation of Cost and Benefit for Economic Analysis (1/10)**

**1) Cost for Sewerage Development Plan for Economic Analysis**

Economic value = Market price × SER(Shadow Exchange Rate) [Foreign currency applicable only]

\*SER(Shadow Exchange Rate) = 1.1

(Economic value-based)

Unit : Million IDR

Items	Short-term		Medium-term				Symbol	Reference	Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Zone No.1	Zone No.6	Zone No.4	Zone No.5	Zone No.8	Zone No.10																					
<b>Construction Cost for Sewerage Development Plan</b>																											
A. Construction Cost	5,314,898	7,164,936	524,768	3,494,605	4,748,815	7,556,670	-	Show Table S/R-D9-6	28,804,691	1,827,381	811,989	1,920,644	937,483	1,920,644	811,989	1,334,101	497,676	748,679	1,053,058	1,417,115	1,809,226	1,812,546	2,394,110	1,392,031	2,285,956	889,625	148,858
a. Direct Construction Cost	4,703,449	6,340,652	464,396	3,092,571	4,202,491	6,687,318	-	Show Table S/R-D9-6	25,490,877	1,617,152	718,575	1,699,685	829,631	1,699,685	718,575	1,180,620	440,422	662,548	931,910	1,254,084	1,601,085	1,604,023	2,118,681	1,231,886	2,022,970	787,279	131,733
(1)House Conection	361,275	464,054	75,824	252,490	332,536	497,467	-	Show Table S/R-D9-6	1,983,646	0	82,533	82,533	82,533	82,533	82,533	82,533	82,533	82,533	123,988	69,510	106,458	106,458	106,458	131,733	131,733	131,733	
(2)Collection Sewer Line	1,947,071	2,863,110	388,572	1,377,981	1,833,424	2,799,797	-	Show Table S/R-D9-6	11,209,957	636,042	636,042	636,042	636,042	636,042	636,042	636,042	357,889	0	349,975	625,571	931,142	931,142	931,142	1,125,428	849,831	655,545	0
(3)Lift Pump Station	0	111,056	0	20,419	35,486	43,134	-	Show Table S/R-D9-6	210,095	0	0	0	111,056	0	0	0	0	0	0	43,134	20,419	35,486	0	0	0	0	0
(4)Wastewater Treatment Plant	1,557,192	1,848,183	0	998,805	1,384,171	2,320,059	-	Show Table S/R-D9-6	8,108,411	981,110	0	981,110	0	981,110	0	462,046	0	580,015	499,403	461,390	580,015	499,403	1,041,405	0	1,041,405	0	0
(5)Facilities Replacement(2013-2050)	837,911	1,054,248	0	442,876	616,873	1,026,861	-	Show Table S/R-D9-6	3,978,769	0	0	0	0	0	0	0	0	0	0	0	0	31,534	39,676	0	0	0	0
b. Indirect Construction Cost	611,448	824,285	60,372	402,034	546,324	869,351	-	Show Table S/R-D9-6	3,313,814	210,230	93,415	220,959	107,852	220,959	93,415	153,481	57,255	86,131	121,148	163,031	208,141	208,523	275,429	160,145	262,986	102,346	17,125
B. Engineering Cost	329,241	443,846	32,508	216,480	294,174	468,112	-	Show Table S/R-D9-6	1,784,361	113,201	50,300	118,978	58,074	118,978	50,300	82,643	30,830	46,378	65,234	87,786	112,076	112,282	148,308	86,232	141,608	55,109	9,221
C. Physical Contingency	265,745	358,247	26,238	174,730	237,441	377,833	-	Show Table S/R-D9-6	1,440,235	91,369	40,599	96,032	46,874	96,032	40,599	66,705	24,884	37,434	52,653	70,856	90,461	90,627	119,705	69,602	114,298	44,481	7,443
D. Land Use Cost	0	0	0	0	0	0	-	Show Table S/R-D9-6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total (excluding Value Added Tax)</b>	5,909,884	7,967,029	583,514	3,885,816	5,280,430	8,402,615	-		<b>32,029,287</b>	<b>2,031,951</b>	<b>902,889</b>	<b>2,135,654</b>	<b>1,042,432</b>	<b>2,135,654</b>	<b>902,889</b>	<b>1,483,450</b>	<b>553,390</b>	<b>832,491</b>	<b>1,170,945</b>	<b>1,575,756</b>	<b>2,011,763</b>	<b>2,015,455</b>	<b>2,662,123</b>	<b>1,547,865</b>	<b>2,541,862</b>	<b>989,215</b>	<b>165,523</b>
	13,876,913		18,152,374																								
<b>O&amp;M Cost for Sewerage Development Plan (Annual)</b>	113,587	139,578	26,498	74,104	102,484	144,808	-	Show Table S/R-D9-7	<b>15,513,998</b>	<b>0</b>	<b>25,316</b>	<b>50,633</b>	<b>75,949</b>	<b>101,266</b>	<b>126,582</b>	<b>151,898</b>	<b>177,215</b>	<b>202,531</b>	<b>227,848</b>	<b>263,328</b>	<b>281,725</b>	<b>311,509</b>	<b>341,294</b>	<b>371,078</b>	<b>409,696</b>	<b>448,313</b>	<b>486,930</b>
<b>Costs for Sewerage Development Plan</b>									<b>47,543,285</b>	<b>2,031,951</b>	<b>928,206</b>	<b>2,186,286</b>	<b>1,118,381</b>	<b>2,236,919</b>	<b>1,029,471</b>	<b>1,635,348</b>	<b>730,605</b>	<b>1,035,022</b>	<b>1,398,793</b>	<b>1,839,084</b>	<b>2,293,488</b>	<b>2,326,965</b>	<b>3,003,417</b>	<b>1,918,943</b>	<b>2,951,557</b>	<b>1,437,528</b>	<b>652,453</b>

**2) Cost for On-site STPs Development Plan for Economic Analysis**

(Economic value-based)

Unit : Million IDR

Unit : Million IDR

Items	1. On-site STP Development Plan	2. Integration Plan for Off-site WWTP and On-site STP		3. Co-treatment Plan of On-site sludge at Off-site WWTPs	Symbol	Reference	Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
		(1) Duri Kosambi	(2) Pulo Gebang																							Zone1 / Zone 5 / Zone 8	
<b>Construction Cost for On-site STPs Development Plan</b>																											
A. Construction Cost	53,959	202,272	211,728	370,612	-	Show Table S/R-D9-14	838,571	282,402	17,951	0	0	0	0	0	0	66,510	66,510	60,558	80,729	2,157	0	0	0	0	0	0	
a. Direct Construction Cost	47,751	179,002	187,370	327,975	-	Show Table S/R-D9-14	742,099	249,913	15,886	0	0	0	0	0	0	58,858	58,858	53,591	71,441	1,909	0	0	0	0	0	0	
(1) STPs	31,771	116,464	136,348	221,658	-	Show Table S/R-D9-14	506,241	249,913	15,886	0	0	0	0	0	0	58,858	58,858	51,344	71,381	0	0	0	0	0	0	0	
(2)Facilities Replacement (from 2013 to 2050)	15,980	62,538	51,023	106,317	-	Show Table S/R-D9-14	235,858	0	0	0	0	0	0	0	0	0	0	2,247	60	1,909	0	0	0	0	0	0	
b. Indirect Construction Cost	6,208	23,270	24,358	42,637	-	Show Table S/R-D9-14	96,473	32,489	2,065	0	0	0	0	0	0	7,652	7,652	6,967	9,287	248	0	0	0	0	0	0	
B. Engineering Cost	3,343	12,530	13,116	22,958	-	Show Table S/R-D9-14	51,947	17,494	1,112	0	0	0	0	0	0	4,120	4,120	3,751	5,001	134	0	0	0	0	0	0	
C. Physical Contingency	2,698	10,114	10,586	18,531	-	Show Table S/R-D9-14	41,929	14,120	898	0	0	0	0	0	0	3,325	3,325	3,028	4,036	108	0	0	0	0	0	0	
D. Land Use Cost	0	0	0	0	-	Show Table S/R-D9-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total (excluding Value Added Tax)</b>	60,000	224,916	235,431	412,101	-	Show Table S/R-D9-14	<b>932,447</b>	<b>314,016</b>	<b>19,960</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>73,955</b>	<b>73,955</b>	<b>67,338</b>	<b>89,766</b>	<b>2,398</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>O&amp;M Cost for On-site STPs Development Plan (Annual)</b>	11,758	6,197	6,263	11,793	-	Show Table S/R-D9-15	<b>1,107,451</b>	<b>1,872</b>	<b>9,226</b>	<b>18,179</b>	<b>19,323</b>	<b>20,433</b>	<b>21,508</b>	<b>22,547</b>	<b>23,550</b>	<b>24,880</b>	<b>26,168</b>	<b>27,285</b>	<b>28,533</b>	<b>29,608</b>	<b>30,611</b>	<b>31,558</b>	<b>32,327</b>	<b>33,027</b>	<b>33,658</b>	<b>33,658</b>	
<b>Costs for On-site STPs Development Plan</b>							<b>2,039,898</b>	<b>315,887</b>	<b>29,187</b>	<b>18,179</b>	<b>19,323</b>	<b>20,433</b>	<b>21,508</b>	<b>22,547</b>	<b>23,550</b>	<b>98,835</b>	<b>100,123</b>	<b>94,622</b>	<b>118,299</b>	<b>32,006</b>	<b>30,611</b>	<b>31,558</b>	<b>32,327</b>	<b>33,027</b>	<b>33,658</b>	<b>33,658</b>	

**Table S/R-E2-2 Calculation of Cost and Benefit for Economic Analysis (2/10)**

**3) Additional cost by introduction of regular de-sludging system**

Items	Discription	Unit	Symbol	Formulas/Reference	Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Cost of regular de-sludging from septic tanks</b>																							
On-site Served Population		1,000person		Show Table S/R-D1-2		9,367	9,974	9,925	9,860	9,795	9,730	9,664	9,599	9,525	9,450	9,272	9,240	9,110	8,972	8,834	8,618	8,403	8,188
CST Served Population		1,000person		Show Table S/R-D1-2		8,502	8,425	8,227	8,017	7,810	7,604	7,401	7,199	6,905	6,615	6,259	6,006	5,694	5,383	5,079	4,740	4,412	4,094
MST Served Population		1,000person		Show Table S/R-D1-2		865	1,550	1,699	1,843	1,985	2,125	2,264	2,400	2,619	2,835	3,013	3,234	3,416	3,589	3,754	3,878	3,991	4,094
Regular Desludging Ratio (CST & MST)		%		Show Table S/R-D1-2	-	0	20	25	30	35	40	45	50	53	56	58	61	64	66	68	71	73	75
Regular Desludging Ratio for CST		%		Show Table S/R-D1-2	-	0	5	10	14	19	24	29	33	35	37	38	40	42	43	45	47	48	50
Regular Desludging Ratio for MST		%		Show Table S/R-D1-2	-	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Regular Desludging Population		1,000person		Show Table S/R-D1-2		0	1,951	2,482	2,988	3,473	3,936	4,378	4,799	5,036	5,261	5,413	5,636	5,788	5,921	6,040	6,090	6,124	6,141
Regular Desludging Population for CST		1,000person	A1	Show Table S/R-D1-2		0	401	784	1,145	1,488	1,810	2,114	2,400	2,417	2,426	2,399	2,402	2,372	2,333	2,286	2,212	2,132	2,047
Regular Desludging Population for MST		1,000person	A2	Show Table S/R-D1-2		0	1,550	1,699	1,843	1,985	2,125	2,264	2,400	2,619	2,835	3,013	3,234	3,416	3,589	3,754	3,878	3,991	4,094
De-sludging period for CST	3 year	%	B1	1/period(year)	-	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
De-sludging period for MST	1 year	%	B2	1/period(year)		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Estimated number of household which should be conducted de-sludging	5 person/household	household	C																				
Number of household which has CST		household	D1	A1 / C x B1	-	0	26,745	52,234	76,354	99,170	120,700	140,964	159,982	161,123	161,702	159,947	160,159	158,155	155,511	152,385	147,471	142,151	136,460
Number of household which has MST		household	D2	A2 / C x B2	-	0	309,911	339,701	368,574	397,035	425,084	452,722	479,947	523,849	567,007	602,698	646,797	683,230	717,745	750,880	775,661	798,288	818,761
Number of household		household	D	D1+D2	-	0	336,657	391,935	444,928	496,205	545,784	593,686	639,930	684,973	728,709	762,644	806,957	841,386	873,256	903,265	923,133	940,439	955,221
<b>Cost of regular de-sludging from septic tanks</b>	350,000 IDR/household	Mill. IDR	E	D x (Unit cost)	<b>10,840,733</b>	<b>0</b>	<b>117,830</b>	<b>137,177</b>	<b>155,725</b>	<b>173,672</b>	<b>191,024</b>	<b>207,790</b>	<b>223,975</b>	<b>239,740</b>	<b>255,048</b>	<b>266,926</b>	<b>282,435</b>	<b>294,485</b>	<b>305,640</b>	<b>316,143</b>	<b>323,096</b>	<b>329,154</b>	<b>334,327</b>

**4) Additional cost by introduction of appropriate O&M for ITP**

Items	Discription	Unit	Symbol	Formulas/Reference	Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Cost of regular de-sludging from ITP</b>																							
Population of ITP user		1,000person		Show Table S/R-D1-2		3,399	3,380	3,360	3,332	3,302	3,270	3,236	3,200	3,162	3,123	3,081	3,038	2,993	2,944	2,893	2,840	2,786	2,729
Introduction Ratio of appropriate O&M for ITP		%		Show Table S/R-D1-2		0	10	12	13	15	17	18	20	23	26	29	32	35	38	41	44	47	50
Introduction Population of appropriate O&M for ITP		1,000person		Show Table S/R-D1-2		0	338	392	444	495	545	593	640	727	812	894	972	1,047	1,119	1,186	1,250	1,309	1,365
De-sludging amount from ITP		m <sup>3</sup> /day	F	Show Table S/R-D1-2	-	0	457	530	601	670	738	803	866	984	1,099	1,209	1,316	1,418	1,514	1,605	1,691	1,772	1,847
Frequency of de-sludging	De-sludging truk volume 4 m <sup>3</sup> / 1 trip	trip/day	G	F x (De-sludging truk volume)		0	114	133	150	168	184	201	217	246	275	302	329	354	378	401	423	443	462
<b>Cost of regular de-sludging from ITP</b>	350,000 IDR/ 1 trip	Mill. IDR	H	G x (Unit cost per trip)	<b>1,790,272</b>	<b>0</b>	<b>14,609</b>	<b>16,942</b>	<b>19,203</b>	<b>21,409</b>	<b>23,557</b>	<b>25,642</b>	<b>27,659</b>	<b>31,435</b>	<b>35,092</b>	<b>38,622</b>	<b>42,019</b>	<b>45,273</b>	<b>48,348</b>	<b>51,264</b>	<b>54,012</b>	<b>56,587</b>	<b>58,981</b>

**5) Additional cost by improvement of the structure of septic tank**

Items	Discription	Unit	Symbol	Formulas/Reference	Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Cost of upgrading CST to MST</b>																								
Upgrading Ratio from CST to MST		%		Show Table S/R-D1-2	-	9	16	17	19	20	22	23	25	28	30	33	35	38	40	43	45	48	50	
On-site Served Population		1,000person		Show Table S/R-D1-2	-	9,367	9,974	9,925	9,860	9,795	9,730	9,664	9,599	9,525	9,450	9,272	9,240	9,110	8,972	8,834	8,618	8,403	8,188	
CST Served Population		1,000person	I1	Show Table S/R-D1-2	-	8,502	8,425	8,227	8,017	7,810	7,604	7,401	7,199	6,905	6,615	6,259	6,006	5,694	5,383	5,079	4,740	4,412	4,094	
MST Served Population	201 *1,000 persons in 2012	1,000person	I2	Show Table S/R-D1-2	-	865	1,550	1,699	1,843	1,985	2,125	2,264	2,400	2,619	2,835	3,013	3,234	3,416	3,589	3,754	3,878	3,991	4,094	
Number of Septic Tank		units	J	J1 + J2	-	1,873,363	1,994,877	1,985,069	1,972,013	1,958,957	1,945,901	1,932,845	1,919,789	1,904,906	1,890,024	1,854,454	1,847,993	1,821,948	1,794,363	1,766,777	1,723,692	1,680,607	1,637,521	
Number of CST	5 person/household	units	J1	I1 x (Population per household)	-	1,700,455	1,684,966	1,645,369	1,603,439	1,561,922	1,520,817	1,480,123	1,439,842	1,381,057	1,323,017	1,251,757	1,201,195	1,138,717	1,076,618	1,015,897	948,031	882,318	818,761	
Number of MST	40,138 units in 2012	units	J2	I2 x (Population per household)	-	172,908	309,911	339,701	368,574	397,035	425,084	452,722	479,947	523,849	567,007	602,698	646,797	683,230	717,745	750,880	775,661	798,288	818,761	
Increment number of MST		units	J3	J2 - (The number in previous year)	778,622	132,770	137,003	29,790	28,873	28,461	28,049	27,637	27,225	43,902	43,158	35,690	44,100	36,433	34,515	33,135	24,781	22,627	20,473	
<b>Cost of upgrading CST to MST</b>	Unit conversion cost 4,500,000 IDR/unit	Mill. IDR	K	J3 x (Unit conversion cost)	<b>3,503,800</b>	<b>597,464</b>	<b>616,512</b>	<b>134,053</b>	<b>129,929</b>	<b>128,075</b>	<b>126,222</b>	<b>124,368</b>	<b>122,515</b>	<b>197,559</b>	<b>194,211</b>	<b>160,607</b>	<b>198,449</b>	<b>163,948</b>	<b>155,316</b>	<b>149,109</b>	<b>111,515</b>	<b>101,821</b>	<b>92,126</b>	
Construction Costs						32,961,734	2,345,967	922,849	2,135,654	1,042,432	2,135,654	902,889	1,483,450	553,390	906,447	1,244,901	1,643,094	2,101,529	2,017,853	2,662,123	1,547,865	2,541,862	989,215	165,523
O&M Costs						16,621,448	1,872	34,543	68,812	95,272	121,698	148,090	174,446	200,765	227,411	254,015	290,612	310,258	341,118	371,905	402,636	442,022	481,340	520,588
Additional costs for On-site De-sludging and Upgrading CST to MST						16,134,804	597,464	748,952	288,172	304,856	323,156	340,803	357,800	374,149	468,735	484,351	466,154	522,903	503,707	509,304	516,515	488,623	487,561	485,434
<b>Costs (Grand total)</b>						<b>65,717,987</b>	<b>2,945,303</b>	<b>1,706,344</b>	<b>2,492,638</b>	<b>1,442,560</b>	<b>2,580,508</b>	<b>1,391,782</b>	<b>2,015,695</b>	<b>1,128,304</b>	<b>1,602,592</b>	<b>1,983,267</b>	<b>2,399,861</b>	<b>2,934,690</b>	<b>2,862,678</b>	<b>3,543,332</b>	<b>2,467,016</b>	<b>3,472,507</b>	<b>1,958,116</b>	<b>1,171,545</b>

**Table S/R-E2-2 Calculation of Cost and Benefit for Economic Analysis (3/10)**

**(2) Benefit for Economic Analysis (Short-term & Medium-term plan)**

\* Each value after 2030 is not changed because the target of economic analysis is short-term and medium-term project only.

Items	Description	Unit	Symbol	Formulas/Reference	Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Service Coverage Ratio		%	L1	Show Table S/R-D1-2		2%	4%	6%	8%	10%	11%	13%	15%	17%	18%	21%	22%	24%	26%	28%	30%	33%	35%
Served Population for Off-Site		1,000person	L2	Show Table S/R-D1-2		171	387	603	820	1,036	1,252	1,469	1,685	1,902	2,118	2,438	2,612	2,884	3,156	3,429	3,778	4,128	4,478
<b>1. Effect of reduction in wastewater treatment cost</b>																							
<b>(1) Reduced cost of regular de-sludging from septic tanks</b>																							
Regular de-sludging Ratio (CST & MST)		%	L3	Show Table S/R-D1-2	-		20	25	30	35	40	45	50	53	56	58	61	64	66	68	71	73	75
De-sludging period	3 year	%	L4	1 / period(year)	-		33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
Estimated number of household which should be conducted de-sludging	5 person/household	household (unit)	L5	L2/(Population per household) x L2 x L3	-		5,045	10,058	16,562	24,490	33,778	44,361	56,174	67,031	78,600	94,870	106,223	122,180	138,883	156,288	178,000	200,551	223,884
<b>Reduced cost of regular de-sludging from septic tanks</b>	350,000 IDR/household	Mill. IDR	L	L5 x (Unit const)	<b>2,473,234</b>	<b>0</b>	<b>1,766</b>	<b>3,520</b>	<b>5,797</b>	<b>8,571</b>	<b>11,822</b>	<b>15,526</b>	<b>19,661</b>	<b>23,461</b>	<b>27,510</b>	<b>33,205</b>	<b>37,178</b>	<b>42,763</b>	<b>48,609</b>	<b>54,701</b>	<b>62,300</b>	<b>70,193</b>	<b>78,359</b>
<b>(2) Reduced cost of upgrading to modified septic tank</b>																							
Upgrading Ratio to modified septic tank		%	M1	Show Table S/R-D1-2	-		16	17	19	20	22	23	25	28	30	33	35	38	40	43	45	48	50
Rate of change		%	M2	(M1:Current) - (M1:Previous)	-		15.5	1.6	1.6	1.6	1.6	1.6	1.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Estimated number of household which should be upgraded to MST	5 person/household	household (unit)	M3	L2/(Population per household) x M2	636,064	12,023	1,903	2,586	3,269	3,951	4,634	5,317	6,000	6,683	7,366	8,049	8,732	9,415	10,098	10,781	11,464	12,147	12,830
<b>Reduced cost of upgrading to MST</b>	4,500,000 IDR/unit	Mill. IDR	M	M3 x (Unit cost)	<b>2,862,290</b>	<b>0</b>	<b>54,105</b>	<b>8,566</b>	<b>11,638</b>	<b>14,709</b>	<b>17,781</b>	<b>20,853</b>	<b>23,925</b>	<b>27,000</b>	<b>30,075</b>	<b>33,150</b>	<b>36,225</b>	<b>39,300</b>	<b>42,375</b>	<b>45,450</b>	<b>48,525</b>	<b>51,600</b>	<b>54,675</b>
<b>(3) Reduced O&amp;M cost of ITP</b>																							
Connection Population from ITP to Sewerage		1,000person	N1	Show Table S/R-D1-2	-		74	150	228	308	390	475	562	647	733	822	913	1,005	1,099	1,195	1,292	1,391	1,493
Estimated wastewater flow from ITP	150 LCD	m3/year	N2	N1 x 150 LCD/1000 x 365	-		4,034,298	8,198,901	12,474,843	16,868,444	21,379,707	26,008,629	30,755,212	35,400,164	40,150,922	45,007,488	49,969,862	55,038,042	60,173,816	65,409,656	70,745,563	76,181,536	81,717,577
<b>Reduced O&amp;M cost of ITP</b>	1,647 IDR/m <sup>3</sup> (based on social economic survey)	Mill. IDR	N	N2 x (Unit cost per m <sup>3</sup> )	<b>3,843,878</b>	<b>0</b>	<b>6,644</b>	<b>13,504</b>	<b>20,546</b>	<b>27,782</b>	<b>35,212</b>	<b>42,836</b>	<b>50,654</b>	<b>58,304</b>	<b>66,129</b>	<b>74,127</b>	<b>82,300</b>	<b>90,648</b>	<b>99,106</b>	<b>107,730</b>	<b>116,518</b>	<b>125,471</b>	<b>134,589</b>
<b>(4) Reduced construction cost and O&amp;M cost of sludge treatment plants</b>																							
Estimated wastewater amount should be treated	Equivalent to the amount of wastewater flow to sewerage	m3/day	O1	L2 x 200LCD/1000	-	34,118	77,393	120,668	163,943	207,218	250,493	293,768	337,043	380,318	423,593	467,868	512,143	556,418	600,693	644,968	689,243	733,518	777,793
Capacity of sludge treatment plants to be developed	Construct in 2013 as first phase and in 2020 as second phase	m3/day	O2	First phase; in 2013 Second phase; in 2020	895,535	337,043							558,492										
Construction cost	677,000 IDR/(m <sup>3</sup> /day)(wastewater based)	Mill. IDR	O3	O2 x (Unit cost)	606,277	228,178							378,099										
Replacement cost	Useful life 15 year	Mill. IDR	O4		1,212,555																	228,178	
O&M cost	240 IDR/m <sup>3</sup> (wastewater based)	Mill. IDR	O5	O1 x (Unit cost) x 365	2,237,808		6,780	10,571	14,361	18,152	21,943	25,734	29,525	33,316	37,107	40,898	44,689	48,480	52,271	56,062	59,853	63,644	67,435
<b>Total cost of sludge treatment plants</b>		Mill. IDR	O	O3 + O4 + O5	<b>4,056,640</b>	<b>228,178</b>	<b>6,780</b>	<b>10,571</b>	<b>14,361</b>	<b>18,152</b>	<b>21,943</b>	<b>25,734</b>	<b>29,525</b>	<b>33,316</b>	<b>37,107</b>	<b>40,898</b>	<b>44,689</b>	<b>48,480</b>	<b>52,271</b>	<b>56,062</b>	<b>59,853</b>	<b>63,644</b>	<b>67,435</b>
<b>2. Effect of improvement in public sanitation</b>																							
<b>(1) Reduced medical treatment cost by reducing the number of patients suffering from waterborne disease</b>																							
Administrative Population	9,718,196 person in 2010	1,000person	P1	Show Table S/R-D1-2	-		10,361	10,529	10,680	10,831	10,982	11,133	11,284	11,426	11,568	11,710	11,852	11,994	12,128	12,262	12,397	12,531	12,665
Administrative Population in Short and Medium-term project area	Rate: 52%	1,000person	P2	P1 x (Rate of admin-pop in short and medium-term project area)	-		5,404	5,491	5,570	5,649	5,728	5,807	5,885	5,959	6,033	6,107	6,181	6,256	6,326	6,396	6,466	6,536	6,606
<b>Without case</b>																							
Number of patient caused by waterborne disease in DKI Jakarta (Without case)	219,030 person(average from 2007 to 2010)	person	P3	P2 x (219,030 persons) / (9,718,196 persons)	-		121,796	123,763	125,540	127,316	129,092	130,868	132,644	134,313	135,981	137,650	139,319	140,988	142,566	144,144	145,722	147,301	148,879
Medical expenses for waterborne disease(Without case)	3,000,000 IDR/patient	Mill. IDR	P4	P3 x (Unit cost per patient)	15,856,380	365,389	371,290	376,619	381,947	387,275	392,604	397,932	402,938	407,944	412,951	417,957	422,963	427,969	432,933	437,167	441,902	446,637	
<b>With case</b>																							
Non-Sewerage Service Coverage Ratio	(=100%-Service Coverage Ratio)	%	P5	100 - L1	-		96%	94%	92%	90%	89%	87%	85%	83%	82%	79%	78%	76%	74%	72%	70%	67%	65%
Non-Sewerage Service population		1,000person	P6	P2 x P5	-		5,202	5,177	5,143	5,109	5,074	5,040	5,006	4,968	4,929	4,836	4,819	4,751	4,679	4,607	4,495	4,383	4,270
Number of patient caused by waterborne disease in DKI Jakarta (With case)		person	P7	P6 x (219,030 persons) / (9,718,196 persons)	-		117,248	116,671	115,904	115,137	114,369	113,602	112,834	111,960	111,085	108,994	108,615	107,084	105,463	103,841	101,309	98,777	96,244
Medical expenses for waterborne disease(With case)	3,000,000 IDR/patient	Mill. IDR	P8	P7 x (Unit cost per patient)	11,352,070	351,743	350,014	347,712	345,410	343,108	340,805	338,503	335,879	333,255	329,683	325,844	321,252	316,388	311,524	303,927	296,330	288,733	
Defarence cost between Without case and With case (without considering reduction rate)		Mill. IDR	P9	P4 - P8	4,504,310	13,646	21,277	28,907	36,537	44,168	51,798	59,429	67,059	74,689	82,319	90,949	99,579	108,209	116,839	125,469	134,099	142,729	151,359
Reduction rate of waterborne diseases by sewerage extension	25 % (refar to Old MP(1991))	%	P10		-		25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
<b>Defarence cost between Without case and With case</b>		Mill. IDR	P	P9 x P10	<b>1,126,077</b>	<b>0</b>	<b>3,412</b>	<b>5,319</b>	<b>7,227</b>	<b>9,134</b>	<b>11,042</b>	<b>12,950</b>	<b>14,857</b>	<b>16,765</b>	<b>18,672</b>	<b>21,492</b>	<b>23,028</b>	<b>25,428</b>	<b>27,828</b>	<b>30,227</b>	<b>33,310</b>	<b>36,393</b>	<b>39,476</b>
<b>(2) Increased benefit by reduction of absence from work due to waterborne disease</b>																							
Defarence number of patient between Without case and With case		person	Q1	P3 - P7	1,501,437	4,549	7,092	9,636	12,179	14,723	17,266	19,810	22,353	24,896	27,439	29,982	32,525	35,068	37,611	40,154	42,697	45,240	47,783
Labor force out of the abobe population	Employed population rate in 2010= 45.2%	person	Q2	Q1 x (Employed pop rate in 2010)	678,625	2,056	3,206	4,355	5,505	6,654	7,804	8,954	10,103	11,253	12,402	13,552	14,701	15,851	17,000	18,150	19,300	20,449	21,599
Number of absence day	7 days absence due to diseases	day	Q3	Q2 x (Number of days absence due to diseases)	4,750,374	14,392	22,439	30,486	38,533	46,580	54,627	62,674	70,721	78,768	86,815	94,862	102,909	110,956	118,956	126,956	134,956	142,956	150,956
Value add	69,809 IDR/day/person(in 2010)	Mill. IDR	Q	Q3 x (Per day added value per person)	<b>331,619</b>	<b>0</b>	<b>1,005</b>	<b>1,566</b>	<b>2,128</b>	<b>2,690</b>	<b>3,252</b>	<b>3,814</b>	<b>4,375</b>	<b>4,937</b>	<b>5,499</b>	<b>6,060</b>	<b>6,622</b>	<b>7,183</b>	<b>7,745</b>	<b>8,306</b>	<b>8,868</b>	<b>9,429</b>	<b>10,000</b>

**Table S/R-E2-2 Calculation of Cost and Benefit for Economic Analysis (4/10)**

**(2) Benefit for Economic Analysis (Short-term & Medium-term plan)**

\* Each value after 2030 is not changed because the target of economic analysis is short-term and medium-term project only.

Items	Description	Unit	Symbol	Formulas/Reference	Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>(3) Increased economic value by saving deaths from waterborne disease</b>																								
Administrative Population	9,718,196 person in 2010	1,000person	R1	Show Table S/R-D1-2	-		10,361	10,529	10,680	10,831	10,982	11,133	11,284	11,426	11,568	11,710	11,852	11,994	12,128	12,262	12,397	12,531	12,665	
Administrative Population in Short and Medium-term project area	Rate: 52%	1,000person	R2	R1 x (Rate of admin-pop in short and medium-term project area)	-		5,404	5,491	5,570	5,649	5,728	5,807	5,885	5,959	6,033	6,107	6,181	6,256	6,326	6,396	6,466	6,536	6,606	
Administrative Population under 5 in Short and Medium-term project area	Population rate of children under 5 = 8.41%	person	R3	R2 x (Pop rate of children under 5)	-		454,529	461,869	468,498	475,126	481,754	488,382	495,010	501,238	507,465	513,693	519,921	526,148	532,038	537,928	543,817	549,707	555,597	
<b>Without case</b>																								
Number of mortality under 5 attributable to sanitation in the area	Mortality rate 3.6% Attributable rate to sanitation: 32%	person	R4	R3 x (Mortality rate) x (Attributable rate to sanitation)	-		5,236	5,321	5,397	5,473	5,550	5,626	5,703	5,774	5,846	5,918	5,989	6,061	6,129	6,197	6,265	6,333	6,400	
<b>With case</b>																								
Non-Sewerage Service Coverage Ratio	(=100%-Service Coverage Ratio)	%	R5	100 - L1	-		96%	94%	92%	90%	89%	87%	85%	83%	82%	79%	78%	76%	74%	72%	70%	67%	65%	
Non-Sewerage Service population		1,000person	R6	R2 x R5	-		5,202	5,177	5,143	5,109	5,074	5,040	5,006	4,968	4,929	4,836	4,819	4,751	4,679	4,607	4,495	4,383	4,270	
Number of mortality under 5 attributable to sanitation in the area	Number of mortality = (non-sewerage service population) x (population rate of children under 5) x (mortality rate x attributable rate to sanitation)	person	R7	Refer to left column	-		5,041	5,016	4,983	4,950	4,917	4,884	4,851	4,813	4,776	4,686	4,669	4,604	4,534	4,464	4,355	4,247	4,138	
Defarence number of mortality between Without case and With case	Number in without case - number in with case	person	R8	R4 - R7	64,549		196	305	414	524	633	742	852	961	1,070	1,232	1,320	1,458	1,595	1,733	1,909	2,086	2,263	
Defarence cost between Without case and With case	97,760 US\$/person/li fe time 837,803,200 IDR/person/life time	Mill IDR	R	R8 x (Life time income of under 5)	54,078,945		163,838	255,448	347,059	438,670	530,281	621,891	713,502	805,113	896,724	1,032,129	1,105,913	1,221,154	1,336,395	1,451,637	1,599,690	1,747,744	1,895,798	
<b>3. Effect on improvement of the living environment</b>																								
<b>(1) Reduced cost of covering small and medium-sized open channels</b>																								
Installation rate (= service coverage ratio)		%	S1	L1	-		2%	4%	6%	8%	10%	11%	13%	15%	17%	18%	21%	22%	24%	26%	28%	30%	33%	35%
Rate of change		%	S2	(S1:current) - (S1:previous)	-		2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	1%	2%	2%	2%	2%	3%	2%	
Development area for installing rid	Total area of Jakarta	66,985 ha in 2020	ha	S3	S2 x (Total area of Jakarta)	22,561	1,381	1,337	1,303	1,266	1,232	1,198	1,166	1,144	1,116	1,681	818	1,345	1,325	1,296	1,687	1,651	1,616	
Inststration cost	100 m/ha 1,000,000 IDR/m	Mill IDR	S	S3 x (Length of small and medium-size open channels per unit area) x (Assumed unit cost of covering)	2,256,131	0	138,117	133,685	130,283	126,648	123,163	119,820	116,611	114,419	111,611	168,074	81,791	134,540	132,499	129,597	168,667	165,053	161,553	
<b>(2) Reduced cost of dredging open channels</b>																								
Dredging rate (= service coverage ratio)		%	T1	L1	-		4%	6%	8%	10%	11%	13%	15%	17%	18%	21%	22%	24%	26%	28%	30%	33%	35%	
Dredging area	Total area of Jakarta	66,985 ha in 2020	ha	T2	T1 x (Total area of Jakarta)	688,561	2,502	3,839	5,141	6,408	7,639	8,838	10,004	11,148	12,264	13,945	14,763	16,108	17,433	18,729	20,416	22,066	23,682	
Dredging cost	100 m/ha 50,000 IDR/m	Mill IDR	T	T2 x (Length of small and medium-size open channels per unit area to be cleaned) x (Assumed unit cost of covering)	3,442,805	0	12,508	19,193	25,707	32,039	38,197	44,188	50,019	55,740	61,320	69,724	73,814	80,541	87,166	93,646	102,079	110,332	118,409	
<b>4. Effect on improvement in quality of public waters</b>																								
<b>Reduced cost of purifying water at waterworks facilities</b>																								
Estimated amount of water use in sewerage service area	200 LCD × 365day Water supply coverage ratio 100%	1,000m3/year	U1	L2 x (200LCD)/ 1,000 x 365 x (Water supply coverage ratio)			28,249	44,044	59,839	75,635	91,430	107,225	123,021	138,816	154,612	177,958	190,680	210,549	230,419	250,289	275,816	301,343	326,870	
<b>Without case</b>																								
Estimated cost of water purification in without case	5,500 IDR/m3	Mill IDR	U2	U1 x (Average water tariff)	51,283,106		155,367	242,242	329,116	415,991	502,866	589,740	676,615	763,489	850,364	978,769	1,048,738	1,158,022	1,267,305	1,376,588	1,516,988	1,657,387	1,797,787	
<b>With case</b>																								
Discharged BOD to public water bodies		mg/L	U3	Show Table S/R-D1-2			58	54	51	47	44	40	37	33	33	32	31	30	29	28	27	26	25	24
Improvement rate of river water quality	against BOD concentration in 2013	%	U4	[(BOD in 2013) - (Current BOD)] / (BOD in 2013)			6%	12%	18%	24%	30%	36%	42%	44%	45%	47%	48%	50%	51%	53%	55%	56%	58%	
Estimated cost of water purification in with case	Estimated cost x (100% - Improvement rate)	Mill IDR	U5	U2 x (100 - U4)	23,236,568		146,063	213,228	269,988	316,343	352,293	377,837	392,977	431,339	466,948	521,952	542,652	580,854	615,593	646,871	688,815	726,310	759,357	
Defarence cost between Without case and With case		Mill IDR	U	U2 - U5	28,046,538	0	9,304	29,014	59,128	99,648	150,573	211,903	283,638	332,151	383,416	456,816	506,087	577,168	651,711	729,717	828,173	931,077	1,038,429	
<b>5. Effect of rise in land value</b>																								
<b>Increased value of land</b>																								
Land area to be rised value of land	Equivalent to sewerage service area	ha	V1	L1 x (Total area of Jakarta)			2,502	3,839	5,141	6,408	7,639	8,838	10,004	11,148	12,264	13,945	14,763	16,108	17,433	18,729	20,416	22,066	23,682	
Increment amount of land area		ha	V2	(V1: current) - (V1:previous)			2,502	1,337	1,303	1,266	1,232	1,198	1,166	1,144	1,116	1,681	818	1,345	1,325	1,296	1,687	1,651	1,616	
Increased value of land	Average land price 1,300,000 IDR/m2 Rate of land price increment by improving sewerage 5%	Mill IDR	V	V2 x (Unit average land price) x 10,000 x (Rate of land price increment by improving sewerage)	15,393,191	0	1,626,104	868,952	846,837	823,209	800,557	778,827	757,970	743,727	725,473	1,092,483	531,641	874,511	861,243	842,384	1,096,335	1,072,842	1,050,096	

**Table S/R-E2-2 Calculation of Cost and Benefit for Economic Analysis (5/10)**

**(2) Benefit for Economic Analysis (Short-term & Medium-term plan)**

\* Each value after 2030 is not changed because the target of economic analysis is short-term and medium-term project only.

Items	Description	Unit	Symbol	Formulas/Reference	Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
<b>6. Effect of tourism recuperation</b>																									
<b>(1) Increased tourism income by improving hotel occupancy</b>																									
<b>Without case</b>																									
Hotel occupancy rate	current 45%	%	W1	Refer to left column	-	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%		
Tourist income	4520 Million US\$/year in whole Indonesia in 2005																								
	Population in whole Indonesia 237,641,326 in 2010																								
	Population in DKI Jakarta 9,718,196 in 2010																								
	185 Million US\$ = 1,584,101 Million IDR/year in Jakarta	Mill. IDR	W2	Refer to left column	58,611,747	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101		
<b>With case</b>																									
Improvement rate of hotel occupancy	= served coverage ratio	%	W3	L1			4%	6%	8%	10%	11%	13%	15%	17%	18%	21%	22%	24%	26%	28%	30%	33%	35%		
Hotel occupancy rate	current 45% target 90%	%	W4	(Current rate) + [(Target rate) - (Current rate)] x W3			47%	48%	48%	49%	50%	51%	52%	52%	53%	54%	55%	56%	57%	58%	59%	60%	61%		
Tourist income	1,584,101 Million IDR/year in Jakarta	Mill. IDR	W5	(Tourist income of Jakarta) x [Hotel occupancy rate(With case)] / [Hotel occupancy rate(Without case)]	74,895,248	1,643,263	1,674,878	1,705,688	1,735,638	1,764,764	1,793,100	1,820,677	1,847,735	1,874,130	1,913,877	1,933,219	1,965,036	1,996,370	2,027,018	2,066,906	2,105,938	2,144,143			
Increased tourism value	With case - Without case	Mill. IDR	W6	W5 - W2	16,283,501	59,162	90,776	121,586	151,537	180,663	208,999	236,575	263,634	290,028	329,776	349,118	380,935	412,269	442,917	482,804	521,837	560,042			
<b>Increased tourism value owing to sanitation</b>	Attributable rate to sanitation 5%	Mill. IDR	W		<b>814,175</b>	<b>2,958</b>	<b>4,539</b>	<b>6,079</b>	<b>7,577</b>	<b>9,033</b>	<b>10,450</b>	<b>11,829</b>	<b>13,182</b>	<b>14,501</b>	<b>16,489</b>	<b>17,456</b>	<b>19,047</b>	<b>20,613</b>	<b>22,146</b>	<b>24,140</b>	<b>26,092</b>	<b>28,002</b>			
<b>(2) Increased tourist expenditure by decreasing rate of water borne disease</b>																									
Administrative Population	9,718,196 person in 2010	1,000person	X1	P1	-	10,361	10,529	10,680	10,831	10,982	11,133	11,284	11,426	11,568	11,710	11,852	11,994	12,128	12,262	12,397	12,531	12,665			
The number of foreign tourist to Jakarta	1,534,785 person/year in DKI	1,000person	X2	(Number of foreign tourist to Jakarta) x X1 / (Admini-pop in 2010)		1,636	1,663	1,687	1,711	1,734	1,758	1,782	1,805	1,827	1,849	1,872	1,894	1,915	1,937	1,958	1,979	2,000			
<b>Without case</b>																									
Disease episodes (severe)	current 1.8%	%	X3	Refer to left column		1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%		
The number of sickened foreign tourist		person	X4	X2 x X3		29,454	29,930	30,360	30,789	31,219	31,648	32,078	32,481	32,885	33,288	33,692	34,096	34,477	34,859	35,241	35,622	36,004			
Tourist expenditure	857,000 IDR/day/per Average length of episode 3 day	Mill. IDR	X5	X4 x (Daily expenditure of a foreign tourist) x (Average length of episode)	3,286,253	75,727	76,950	78,055	79,159	80,263	81,368	82,472	83,509	84,547	85,585	86,622	87,660	88,641	89,622	90,603	91,585	92,566			
<b>With case</b>																									
Improvement rate of disease episodes	= served coverage ratio	%	X6	L1		0%	4%	6%	8%	10%	11%	13%	15%	17%	18%	21%	22%	24%	26%	28%	30%	33%	35%		
Disease episodes (severe)	current 1.8% target 0%	%	X7	(Current rate) + [(Target rate) - (Current rate)] x X6		1.73%	1.70%	1.66%	1.63%	1.59%	1.56%	1.53%	1.50%	1.47%	1.43%	1.40%	1.37%	1.33%	1.30%	1.25%	1.21%	1.16%			
The number of sickened foreign tourist		person	X8	X2 x X7		28,354	28,215	28,029	27,844	27,658	27,473	27,287	27,076	26,864	26,358	26,267	25,896	25,504	25,112	24,500	23,887	23,275			
Tourist expenditure	857,000 IDR/day/per Average length of episode 3 day	Mill. IDR	X9	X8 x (Daily expenditure of a foreign tourist) x (Average length of episode)	2,352,730	72,899	72,541	72,064	71,587	71,109	70,632	70,155	69,611	69,068	67,768	67,532	66,580	65,572	64,564	62,989	61,415	59,840			
Increased tourist expenditure	Without case - With case	Mill. IDR	X10	X5 - X9	933,523	2,828	4,410	5,991	7,572	9,154	10,735	12,317	13,898	15,479	17,817	19,091	21,080	23,069	25,058	27,614	30,170	32,726			
<b>Increased tourist expenditure owing to sanitation</b>	Attributable rate to sanitation 5%	Mill. IDR	X	X10 x (Attributable rate to sanitation)	<b>46,676</b>	<b>141</b>	<b>220</b>	<b>300</b>	<b>379</b>	<b>458</b>	<b>537</b>	<b>616</b>	<b>695</b>	<b>774</b>	<b>891</b>	<b>955</b>	<b>1,054</b>	<b>1,153</b>	<b>1,253</b>	<b>1,381</b>	<b>1,508</b>	<b>1,636</b>			
<b>Benefit (Grand total)</b>					Mill. IDR		<b>118,772,199</b>	<b>228,178</b>	<b>2,026,683</b>	<b>1,354,096</b>	<b>1,477,089</b>	<b>1,609,209</b>	<b>1,753,314</b>	<b>1,909,329</b>	<b>2,455,281</b>	<b>2,244,595</b>	<b>2,396,390</b>	<b>3,069,319</b>	<b>2,571,479</b>	<b>3,189,768</b>	<b>3,400,839</b>	<b>3,609,152</b>	<b>4,421,788</b>	<b>4,462,624</b>	<b>4,737,170</b>

**Table S/R-E2-2 Calculation of Cost and Benefit for Economic Analysis (6/10)**

**(1) Cost for Economic Analysis (Short-term & Medium-term plan)**

**1) Cost for Sewerage Development Plan for Economic Analysis**

(Economic value-based)

Unit : Million IDR

Unit : Million IDR

Items	Short-term		Medium-term				Symbol	Reference	Total	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
	Zone No.1	Zone No.6	Zone No.4	Zone No.5	Zone No.8	Zone No.10																							
<b>Construction Cost for Sewerage Development Plan</b>																													
A. Construction Cost	5,314,898	7,164,936	524,768	3,494,605	4,748,815	7,556,670	-	Show Table S/R-D9-6	28,804,691	120,298	120,298	111,920	100,922	761,451	917,173	0	0	0	0	0	0	477,126	1,106,275	846,821	229,293	0	0	0	
a. Direct Construction Cost	4,703,449	6,340,652	464,396	3,092,571	4,202,491	6,687,318	-	Show Table S/R-D9-6	25,490,877	106,458	106,458	99,044	89,312	673,850	811,658	0	0	0	0	0	0	422,236	979,004	749,399	202,914	0	0	0	
(1)House Connection	361,275	464,054	75,824	252,490	332,536	497,467	-	Show Table S/R-D9-6	1,983,646	106,458	106,458	78,404	41,456	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
(2)Collection Sewer Line	1,947,071	2,863,110	388,572	1,377,981	1,833,424	2,799,797	-	Show Table S/R-D9-6	11,209,957	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
(3)Lift Pump Station	0	111,056	0	20,419	35,486	43,134	-	Show Table S/R-D9-6	210,095	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
(4)Wastewater Treatment Plant	1,557,192	1,848,183	0	998,805	1,384,171	2,320,059	-	Show Table S/R-D9-6	8,108,411	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
(5)Facilities Replacement(2013-2050)	837,911	1,054,248	0	442,876	616,873	1,026,861	-	Show Table S/R-D9-6	3,978,769	0	0	20,640	47,856	673,850	811,658	0	0	0	0	0	0	422,236	979,004	749,399	202,914	0	0	0	
b. Indirect Construction Cost	611,448	824,285	60,372	402,034	546,324	869,351	-	Show Table S/R-D9-6	3,313,814	13,840	13,840	12,876	11,611	87,601	105,516	0	0	0	0	0	0	54,891	127,271	97,422	26,379	0	0	0	
B. Engineering Cost	329,241	443,846	32,508	216,480	294,174	468,112	-	Show Table S/R-D9-6	1,784,361	7,452	7,452	6,933	6,252	47,170	56,816	0	0	0	0	0	0	29,557	68,530	52,458	14,204	0	0	0	
C. Physical Contingency	265,745	358,247	26,238	174,730	237,441	377,833	-	Show Table S/R-D9-6	1,440,235	6,015	6,015	5,596	5,046	38,073	45,859	0	0	0	0	0	0	23,856	55,314	42,341	11,465	0	0	0	
D. Land Use Cost	0	0	0	0	0	0	-	Show Table S/R-D9-6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Total (excluding Value Added Tax)</b>	5,909,884	7,967,029	583,514	3,885,816	5,280,430	8,402,615	-		<b>32,029,287</b>	<b>133,765</b>	<b>133,765</b>	<b>124,449</b>	<b>112,220</b>	<b>846,693</b>	<b>1,019,848</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>530,539</b>	<b>1,230,119</b>	<b>941,620</b>	<b>254,962</b>	<b>0</b>	<b>0</b>	<b>0</b>	
	13,876,913		18,152,374																										
<b>O&amp;M Cost for Sewerage Development Plan (Annual)</b>	113,587	139,578	26,498	74,104	102,484	144,808	-	Show Table S/R-D9-7	<b>15,513,998</b>	<b>516,714</b>	<b>546,499</b>	<b>568,050</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	
<b>Costs for Sewerage Development Plan</b>									<b>47,543,285</b>	<b>650,479</b>	<b>680,264</b>	<b>692,498</b>	<b>690,434</b>	<b>1,424,906</b>	<b>1,598,061</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	<b>1,108,752</b>	<b>1,808,332</b>	<b>1,519,834</b>	<b>833,175</b>	<b>578,213</b>	<b>578,213</b>	<b>578,213</b>	

**2) Cost for On-site STPs Development Plan for Economic Analysis**

(Economic value-based)

Unit : Million IDR

Unit : Million IDR

Items	1. On-site STP Development Plan	2. Integration Plan for Off-site WWTP and On-site STP		3. Co-treatment Plan of On-site sludge at Off-site WWTPs	Symbol	Reference	Total	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
		(1) Duri Kosambi	(2) Pulo Gebang																									Zone1 / Zone 5 / Zone 8
<b>Construction Cost for On-site STPs Development Plan</b>	Construction of a new STP in South area																											
A. Construction Cost	53,959	202,272	211,728	370,612	-	Show Table S/R-D9-14	838,571	0	2,566	55,622	14,392	47,854	0	0	0	0	0	0	55,089	37,654	3,598	44,980	0	0	0	0	0	
a. Direct Construction Cost	47,751	179,002	187,370	327,975	-	Show Table S/R-D9-14	742,099	0	2,271	49,223	12,736	42,349	0	0	0	0	0	0	48,751	33,322	3,184	39,805	0	0	0	0	0	
(1) STPs	31,771	116,464	136,348	221,658	-	Show Table S/R-D9-14	506,241	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
(2)Facilities Replacement (from 2013 to 2050)	15,980	62,538	51,023	106,317	-	Show Table S/R-D9-14	235,858	0	2,271	49,223	12,736	42,349	0	0	0	0	0	0	48,751	33,322	3,184	39,805	0	0	0	0	0	
b. Indirect Construction Cost	6,208	23,270	24,358	42,637	-	Show Table S/R-D9-14	96,473	0	295	6,399	1,656	5,505	0	0	0	0	0	0	6,338	4,332	414	5,175	0	0	0	0	0	
B. Engineering Cost	3,343	12,530	13,116	22,958	-	Show Table S/R-D9-14	51,947	0	159	3,446	892	2,964	0	0	0	0	0	0	3,413	2,333	223	2,786	0	0	0	0	0	
C. Physical Contingency	2,698	10,114	10,586	18,531	-	Show Table S/R-D9-14	41,929	0	128	2,781	720	2,393	0	0	0	0	0	0	2,754	1,883	180	2,249	0	0	0	0	0	
D. Land Use Cost	0	0	0	0	-	Show Table S/R-D9-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total (excluding Value Added Tax)</b>	60,000	224,916	235,431	412,101	-	Show Table S/R-D9-14	<b>932,447</b>	<b>0</b>	<b>2,854</b>	<b>61,849</b>	<b>16,003</b>	<b>53,212</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>61,256</b>	<b>41,869</b>	<b>4,001</b>	<b>50,015</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>O&amp;M Cost for On-site STPs Development Plan (Annual)</b>	11,758	6,197	6,263	11,793	-	Show Table S/R-D9-15	<b>1,107,451</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	
<b>Costs for On-site STPs Development Plan</b>							<b>2,039,898</b>	<b>33,658</b>	<b>36,512</b>	<b>95,507</b>	<b>49,661</b>	<b>86,870</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>94,914</b>	<b>75,527</b>	<b>37,659</b>	<b>83,673</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	<b>33,658</b>	

**Table S/R-E2-2 Calculation of Cost and Benefit for Economic Analysis (7/10)**

**3) Additional cost by introduction of regular de-sludging system**

\* Each value after 2030 is not changed because the target of economic analysis is short-term and medium-term project only.

Items	Description	Unit	Symbol	Formulas/Reference	Total	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
<b>Cost of regular de-sludging from septic tanks</b>																									
On-site Served Population		1,000person		Show Table S/R-D1-2		8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188
CST Served Population		1,000person		Show Table S/R-D1-2		4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094
MST Served Population		1,000person		Show Table S/R-D1-2		4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094
Regular Desludging Ratio (CST & MST)		%		Show Table S/R-D1-2	-	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Regular Desludging Ratio for CST		%		Show Table S/R-D1-2	-	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Regular Desludging Ratio for MST		%		Show Table S/R-D1-2	-	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Regular Desludging Population		1,000person		Show Table S/R-D1-2		6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141
Regular Desludging Population for CST		1,000person	A1	Show Table S/R-D1-2		2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047
Regular Desludging Population for MST		1,000person	A2	Show Table S/R-D1-2		4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094
De-sludging period for CST	3 year	%	B1	1/period(year)	-	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
De-sludging period for MST	1 year	%	B2	1/period(year)		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Estimated number of household which should be conducted de-sludging	5 person/household	household	C																						
Number of household which has CST		household	D1	A1 / C x B1	-	136,460	136,460	136,460	136,460	136,460	136,460	136,460	136,460	136,460	136,460	136,460	136,460	136,460	136,460	136,460	136,460	136,460	136,460	136,460	136,460
Number of household which has MST		household	D2	A2 / C x B2	-	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761
Number of household		household	D	D1+D2	-	955,221	955,221	955,221	955,221	955,221	955,221	955,221	955,221	955,221	955,221	955,221	955,221	955,221	955,221	955,221	955,221	955,221	955,221	955,221	955,221
<b>Cost of regular de-sludging from septic tanks</b>	350,000 IDR/household	Mill. IDR	E	D x (Unit cost)	<b>10,840,733</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>	<b>334,327</b>

**4) Additional cost by introduction of appropriate O&M for ITP**

\* Each value after 2030 is not changed because the target of economic analysis is short-term and medium-term project only.

Items	Description	Unit	Symbol	Formulas/Reference	Total	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
<b>Cost of regular de-sludging from ITP</b>																									
Population of ITP user		1,000person		Show Table S/R-D1-2		2,729	2,729	2,729	2,729	2,729	2,729	2,729	2,729	2,729	2,729	2,729	2,729	2,729	2,729	2,729	2,729	2,729	2,729	2,729	2,729
Introduction Ratio of appropriate O&M for ITP		%		Show Table S/R-D1-2		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Introduction Population of appropriate O&M for ITP		1,000person		Show Table S/R-D1-2		1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365
De-sludging amount from ITP		m <sup>3</sup> /day	F	Show Table S/R-D1-2	-	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847
Frequency of de-sludging	De-sludging truk volume 4 m <sup>3</sup> / 1 trip	trip/day	G	F x (De-sludging truk volume)		462	462	462	462	462	462	462	462	462	462	462	462	462	462	462	462	462	462	462	462
<b>Cost of regular de-sludging from ITP</b>	350,000 IDR/ 1 trip	Mill. IDR	H	G x (Unit cost per trip)	<b>1,790,272</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>	<b>58,981</b>

**5) Additional cost by improvement of the structure of septic tank**

\* Each value after 2030 is not changed because the target of economic analysis is short-term and medium-term project only.

Items	Description	Unit	Symbol	Formulas/Reference	Total	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
<b>Cost of upgrading CST to MST</b>																										
Upgrading Ratio from CST to MST		%		Show Table S/R-D1-2	-	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	
On-site Served Population		1,000person		Show Table S/R-D1-2	-	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	8,188	
CST Served Population		1,000person	I1	Show Table S/R-D1-2	-	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	
MST Served Population	201 *1,000 persons in 2012	1,000person	I2	Show Table S/R-D1-2	-	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	4,094	
Number of Septic Tank		units	J	J1 + J2	-	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	1,637,521	
Number of CST	5 person/household	units	J1	I1 x (Population per household)	-	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	
Number of MST	40,138 units in 2012	units	J2	I2 x (Population per household)	-	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	818,761	
Increment number of MST		units	J3	J2 - (The number in previous year)	778,622	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Cost of upgrading CST to MST</b>	Unit conversion cost 4,500,000 IDR/unit	Mill. IDR	K	J3 x (Unit conversion cost)	<b>3,503,800</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Construction Costs					32,961,734	133,765	136,619	186,298	128,223	899,904	1,019,848	0	0	0	0	0	61,256	572,409	1,234,120	991,635	254,962	0	0	0	0	
O&M Costs					16,621,448	550,372	580,157	601,708	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871
Additional costs for On-site De-sludging and Upgrading CST to MST					16,134,804	393,308	393,308	393,308	393,308	393,308	393,308	393,308	393,308	393,308	393,308	393,308	393,308	393,308	393,308	393,308	393,308	393,308	393,308	393,308	393,308	393,308
<b>Costs (Grand total)</b>					<b>65,717,987</b>	<b>1,077,446</b>	<b>1,110,084</b>	<b>1,181,314</b>	<b>1,133,402</b>	<b>1,905,084</b>	<b>2,025,027</b>	<b>1,005,179</b>	<b>1,005,179</b>	<b>1,005,179</b>	<b>1,005,179</b>	<b>1,005,179</b>	<b>1,066,435</b>	<b>1,577,588</b>	<b>2,239,299</b>	<b>1,996,815</b>	<b>1,260,141</b>	<b>1,005,179</b>	<b>1,005,179</b>	<b>1,005,179</b>	<b>1,005,179</b>	

**Table S/R-E2-2 Calculation of Cost and Benefit for Economic Analysis (8/10)**

\* Each value after 2030 is not changed because the target of economic analysis is short-term and medium-term project only.

**(2) Benefit for Economic Analysis (Short-term & Medium-term plan)**

Items	Description	Unit	Symbol	Formulas/Reference	Total	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
Service Coverage Ratio		%	L1	Show Table S/R-D1-2		35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	
Served Population for Off-Site		1,000person	L2	Show Table S/R-D1-2		4,478	4,478	4,478	4,478	4,478	4,478	4,478	4,478	4,478	4,478	4,478	4,478	4,478	4,478	4,478	4,478	4,478	4,478	4,478	4,478	
<b>1. Effect of reduction in wastewater treatment cost</b>																										
<b>(1) Reduced cost of regular de-sludging from septic tanks</b>																										
Regular de-sludging Ratio (CST & MST)		%	L3	Show Table S/R-D1-2	-	77	80	82	84	86	88	89	91	92	94	95	96	97	98	98	99	99	100	100	100	100
De-sludging period	3 year	%	L4	1 / period(year)	-	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
Estimated number of household which should be conducted de-sludging	5 person/household	household (unit)	L5	L2/(Population per household) x L2 x L3	-	231,160	238,063	244,593	250,750	256,533	261,944	266,981	271,646	275,937	279,855	283,400	286,571	289,370	291,795	293,847	295,527	296,833	297,765	298,325	298,512	
<b>Reduced cost of regular de-sludging from septic tanks</b>	350,000 IDR/household	Mill IDR	L	L5 x (Unit const)	<b>2,473,234</b>	<b>80,906</b>	<b>83,322</b>	<b>85,608</b>	<b>87,762</b>	<b>89,787</b>	<b>91,680</b>	<b>93,443</b>	<b>95,076</b>	<b>96,578</b>	<b>97,949</b>	<b>99,190</b>	<b>100,300</b>	<b>101,279</b>	<b>102,128</b>	<b>102,847</b>	<b>103,434</b>	<b>103,891</b>	<b>104,218</b>	<b>104,414</b>	<b>104,479</b>	
<b>(2) Reduced cost of upgrading to modified septic tank</b>																										
Upgrading Ratio to modified septic tank		%	M1	Show Table S/R-D1-2	-	53	55	58	60	63	65	68	70	73	75	78	80	83	85	88	90	93	95	98	100	
Rate of change		%	M2	(M1;Current) - (M1;Previous)	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Estimated number of household which should be upgraded to MST	5 person/household	household (unit)	M3	L2/(Population per household) x M2	636,064	22,388	22,388	22,388	22,388	22,388	22,388	22,388	22,388	22,388	22,388	22,388	22,388	22,388	22,388	22,388	22,388	22,388	22,388	22,388	22,388	
<b>Reduced cost of upgrading to MST</b>	4,500,000 IDR/unit	Mill IDR	M	M3 x (Unit cost)	<b>2,862,290</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	<b>100,748</b>	
<b>(3) Reduced O&amp;M cost of ITP</b>																										
Connection Population from ITP to Sewerage		1,000person	N1	Show Table S/R-D1-2	-	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	1,493	
Estimated wastewater flow from ITP	150 LCD	m <sup>3</sup> /year	N2	N1 x 150 LCD/1000 x 365	-	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	81,717,577	
<b>Reduced O&amp;M cost of ITP</b>	1,647 IDR/m <sup>3</sup> (based on social economic survey)	Mill IDR	N	N2 x (Unit cost per m <sup>3</sup> )	<b>3,843,878</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	<b>134,589</b>	
<b>(4) Reduced construction cost and O&amp;M cost of sludge treatment plants</b>																										
Estimated wastewater amount should be treated	Equivalent to the amount of wastewater flow to sewerage	200 LCD	m <sup>3</sup> /day	O1	L2 x 200LCD/1000	-	895,535	895,535	895,535	895,535	895,535	895,535	895,535	895,535	895,535	895,535	895,535	895,535	895,535	895,535	895,535	895,535	895,535	895,535	895,535	
Capacity of sludge treatment plants to be developed	Construct in 2013 as first phase and in 2020 as second phase	m <sup>3</sup> /day	O2	First phase; in 2013 Second phase; in 2020	895,535																					
Construction cost	677,000 IDR/(m <sup>3</sup> /day)(wastewater based)	Mill IDR	O3	O2 x (Unit cost)	606,277																					
Replacement cost	Useful life 15 year	Mill IDR	O4		1,212,555					378,099															378,099	
O&M cost	240 IDR/m <sup>3</sup> (wastewater based)	Mill IDR	O5	O1 x (Unit cost) x 365	2,237,808	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	
<b>Total cost of sludge treatment plants</b>		Mill IDR	O	O3 + O4 + O5	<b>4,056,640</b>	<b>78,449</b>	<b>78,449</b>	<b>78,449</b>	<b>78,449</b>	<b>456,548</b>	<b>78,449</b>	<b>78,449</b>	<b>78,449</b>	<b>78,449</b>	<b>78,449</b>	<b>78,449</b>	<b>78,449</b>	<b>78,449</b>	<b>78,449</b>	<b>78,449</b>	<b>78,449</b>	<b>78,449</b>	<b>78,449</b>	<b>78,449</b>	<b>456,548</b>	
<b>2. Effect of improvement in public sanitation</b>																										
<b>(1) Reduced medical treatment cost by reducing the number of patients suffering from waterborne disease</b>																										
Administrative Population	9,718,196 person in 2010	1,000person	P1	Show Table S/R-D1-2	-	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	
Administrative Population in Short and Medium-term project area	Rate: 52%	1,000person	P2	P1 x (Rate of admin-pop in short and medium-term project area)	-	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	
<b>Without case</b>																										
Number of patient caused by waterborne disease in DKI Jakarta (Without case)	219,030 person(average from 2007 to 2010)	person	P3	P2 x (219,030 persons) / (9,718,196 persons)	-	148,879	148,879	148,879	148,879	148,879	148,879	148,879	148,879	148,879	148,879	148,879	148,879	148,879	148,879	148,879	148,879	148,879	148,879	148,879	148,879	
Medical expenses for waterborne disease(Without case)	3,000,000 IDR/patient	Mill IDR	P4	P3 x (Unit cost per patient)	15,856,380	446,637	446,637	446,637	446,637	446,637	446,637	446,637	446,637	446,637	446,637	446,637	446,637	446,637	446,637	446,637	446,637	446,637	446,637	446,637	446,637	
<b>With case</b>																										
Non-Sewerage Service Coverage Ratio	(=100%-Service Coverage Ratio)	%	P5	100 - L1	-	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	
Non-Sewerage Service population		1,000person	P6	P2 x P5	-	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	
Number of patient caused by waterborne disease in DKI Jakarta (With case)		person	P7	P6 x (219,030 persons) / (9,718,196 persons)	-	96,244	96,244	96,244	96,244	96,244	96,244	96,244	96,244	96,244	96,244	96,244	96,244	96,244	96,244	96,244	96,244	96,244	96,244	96,244	96,244	
Medical expenses for waterborne disease(With case)	3,000,000 IDR/patient	Mill IDR	P8	P7 x (Unit cost per patient)	11,352,070	288,733	288,733	288,733	288,733	288,733	288,733	288,733	288,733	288,733	288,733	288,733	288,733	288,733	288,733	288,733	288,733	288,733	288,733	288,733	288,733	
Defarence cost between Without case and With case (without considering reduction rate)		Mill IDR	P9	P4 - P8	4,504,310	157,904	157,904	157,904	157,904	157,904	157,904	157,904	157,904	157,904	157,904	157,904	157,904	157,904	157,904	157,904	157,904	157,904	157,904	157,904	157,904	
Reduction rate of waterborne diseases by sewerage extension	25 % (refar to Old MP(1991))	%	P10		-	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	
<b>Defarence cost between Without case and With case</b>		Mill IDR	P	P9 x P10	<b>1,126,077</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	<b>39,476</b>	
<b>(2) Increased benefit by reduction of absence from work due to waterborne disease</b>																										
Defarence number of patient between Without case and With case		person	Q1	P3 - P7	1,501,437	52,635	52,635	52,635	52,635	52,635	52,635	52,635	52,635	52,635	52,635	52,635	52,635	52,635	52,635	52,635	52,635	52,635	52,635	52,635	52,635	
Labor force out of the abobe population	Employed population rate in 2010= 45.2%	person	Q2	Q1 x (Employed pop rate in 2010)	678,625	23,790	23,790	23,790	23,790	23,790	23,790	23,790	23,790	23,790	23,790	23,790	23,790	23,790	23,790	23,790	23,790	23,790	23,790	23,790	23,790	
Number of absence day	7 days absence due to diseases	day	Q3	Q2 x (Number of days absence due to diseases)	4,750,374	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	
Value add	69,809 IDR/day/person(in 2010)	Mill IDR	Q	Q3 x (Per day added value per person)	<b>331,619</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	<b>11,625</b>	



**Table S/R-E2-2 Calculation of Cost and Benefit for Economic Analysis (9/10)**

**(2) Benefit for Economic Analysis (Short-term & Medium-term plan)**

\* Each value after 2030 is not changed because the target of economic analysis is short-term and medium-term project only.

Items	Description	Unit	Symbol	Formulas/Reference	Total	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
<b>(3) Increased economic value by saving deaths from waterborne disease</b>																										
Administrative Population	9,718,196 person in 2010	1,000person	R1	Show Table S/R-D1-2	-	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665
Administrative Population in Short and Medium-term project area	Rate: 52%	1,000person	R2	R1 x (Rate of admin-pop in short and medium-term project area)	-	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606	6,606
Administrative Population under 5 in Short and Medium-term project area	Population rate of children under 5 = 8.41%	person	R3	R2 x (Pop rate of children under 5)	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597	555,597
<b>Without case</b>																										
Number of mortality under 5 attributable to sanitation in the area	Mortality rate 3.6% Attributable rate to sanitation: 32%	person	R4	R3 x (Mortality rate) x (Attributable rate to sanitation)	-	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400
<b>With case</b>																										
Non-Sewerage Service Coverage Ratio	(=100%-Service Coverage Ratio)	%	R5	100 - L1	-	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%
Non-Sewerage Service population		1,000person	R6	R2 x R5	-	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270	4,270
Number of mortality under 5 attributable to sanitation in the area	Number of mortality = (non-sewerage service population) x (population rate of children under 5) x (mortality rate x attributable rate to sanitation)	person	R7	Refer to left column	-	4,138	4,138	4,138	4,138	4,138	4,138	4,138	4,138	4,138	4,138	4,138	4,138	4,138	4,138	4,138	4,138	4,138	4,138	4,138	4,138	4,138
Defarence number of mortality between Without case and With case	Number in without case - number in with case	person	R8	R4 - R7	64,549	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263
Defarence cost between Without case and With case	97,760 US\$/person/lyfe time 837,803,200 IDR/person/lyfe time	Mill. IDR	R	R8 x (Life time income of under 5)	54,078,945	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798
<b>3. Effect on improvement of the living environment</b>																										
<b>(1) Reduced cost of covering small and medium-sized open channels</b>																										
Installation rate (= service coverage ratio)		%	S1	L1	-	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%
Rate of change		%	S2	(S1:current) - (S1:previous)	-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Development area for installing rid	Total area of Jakarta 66,985 ha in 2020	ha	S3	S2 x (Total area of Jakarta)	22,561	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Instration cost	100 m/ha 1,000,000 IDR/m	Mill. IDR	S	S3 x (Length of small and medium-size open channels per unit area) x (Assumed unit cost of covering)	2,256,131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>(2) Reduced cost of dredging open channels</b>																										
Dredging rate (= service coverage ratio)		%	T1	L1	-	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%
Dredging area	Total area of Jakarta 66,985 ha in 2020	ha	T2	T1 x (Total area of Jakarta)	688,561	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682
Dredging cost	100 m/ha 50,000 IDR/m	Mill. IDR	T	T2 x (Length of small and medium-size open channels per unit area to be cleaned) x (Assumed unit cost of covering)	3,442,805	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409
<b>4. Effect on improvement in quality of public waters</b>																										
<b>Reduced cost of purifying water at waterworks facilities</b>																										
Estimated amount of water use in sewerage service area	200 LCD x 365day Water supply coverage ratio 100%	1,000m3/year	U1	L2 x (200LCD)/ 1,000 x 365 x (Water supply coverage ratio)	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870	326,870
<b>Without case</b>																										
Estimated cost of water purification in without case	5,500 IDR/m3	Mill. IDR	U2	U1 x (Average water tariff)	51,283,106	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787	1,797,787
<b>With case</b>																										
Discharged BOD to public water bodies		mg/L	U3	Show Table S/R-D1-2	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Improvement rate of river water quality	against BOD concentration in 2013	%	U4	[(BOD in 2013) - (Current BOD)] / (BOD in 2013)	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%
Estimated cost of water purification in with case	Estimated cost x (100% - Improvement rate)	Mill. IDR	U5	U2 x (100 - U4)	23,236,568	759,357	759,357	759,357	759,357	759,357	759,357	759,357	759,357	759,357	759,357	759,357	759,357	759,357	759,357	759,357	759,357	759,357	759,357	759,357	759,357	759,357
Defarence cost between Without case and With case		Mill. IDR	U	U2 - U5	28,046,538	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429
<b>5. Effect of rise in land value</b>																										
<b>Increased value of land</b>																										
Land area to be rised value of land	Equivalent to sewerage service area	ha	V1	L1 x (Total area of Jakarta)	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682	23,682
Increment amount of land area		ha	V2	(V1: current) - (V1:previous)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Increased value of land	Average land price 1,300,000 IDR/m2 Rate of land price increment by improving sewerage 5%	Mill. IDR	V	V2 x (Unit average land price) x 10,000 x (Rate of land price increment by improving sewerage)	15,393,191	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Table S/R-E2-2 Calculation of Cost and Benefit for Economic Analysis (10/10)**

**(2) Benefit for Economic Analysis (Short-term & Medium-term plan)**

\* Each value after 2030 is not changed because the target of economic analysis is short-term and medium-term project only.

Items	Description	Unit	Symbol	Formulas/Reference	Total	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050			
<b>6. Effect of tourism recuperation</b>																												
<b>(1) Increased tourism income by improving hotel occupancy</b>																												
<b>Without case</b>																												
Hotel occupancy rate	current 45%	%	W1	Refer to left column	-	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%			
Tourist income	4520 Million US\$ / year in whole Indonesia in 2005																											
	Population in whole Indonesia 237,641,326 in 2010																											
	Population in DKI Jakarta 9,718,196 in 2010																											
	185 Million US\$ = 1,584,101 Million IDR / year in Jakarta	Mill IDR	W2	Refer to left column	58,611,747	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101	1,584,101			
<b>With case</b>																												
Improvement rate of hotel occupancy	= served coverage ratio	%	W3	L1		35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%			
Hotel occupancy rate	current 45% target 90%	%	W4	(Current rate) + [(Target rate) - (Current rate)] x W3		61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%			
Tourist income	1,584,101 Million IDR / year in Jakarta	Mill IDR	W5	(Tourist income of Jakarta) x [Hotel occupancy rate (With case)] / [Hotel occupancy rate (Without case)]	74,895,248	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143	2,144,143			
Increased tourism value	With case - Without case	Mill IDR	W6	W5 - W2	16,283,501	560,042	560,042	560,042	560,042	560,042	560,042	560,042	560,042	560,042	560,042	560,042	560,042	560,042	560,042	560,042	560,042	560,042	560,042	560,042	560,042			
<b>Increased tourism value owing to sanitation</b>	Attributable rate to sanitation 5%	Mill IDR	W		<b>814,175</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>	<b>28,002</b>			
<b>(2) Increased tourist expenditure by decreasing rate of water borne disease</b>																												
Administrative Population	9,718,196 person in 2010	1,000 person	X1	P1	-	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665			
The number of foreign tourist to Jakarta	1,534,785 person / year in DKI	1,000 person	X2	(Number of foreign tourist to Jakarta) x X1 / (Admini-pop in 2010)		2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000			
<b>Without case</b>																												
Disease episodes (severe)	current 1.8%	%	X3	Refer to left column		1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%			
The number of sickened foreign tourist		person	X4	X2 x X3		36,004	36,004	36,004	36,004	36,004	36,004	36,004	36,004	36,004	36,004	36,004	36,004	36,004	36,004	36,004	36,004	36,004	36,004	36,004	36,004			
Tourist expenditure	857,000 IDR / day / per Average length of episode 3 day	Mill IDR	X5	X4 x (Daily expenditure of a foreign tourist) x (Average length of episode)	3,286,253	92,566	92,566	92,566	92,566	92,566	92,566	92,566	92,566	92,566	92,566	92,566	92,566	92,566	92,566	92,566	92,566	92,566	92,566	92,566	92,566			
<b>With case</b>																												
Improvement rate of disease episodes	= served coverage ratio	%	X6	L1		35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%			
Disease episodes (severe)	current 1.8% target 0%	%	X7	(Current rate) + [(Target rate) - (Current rate)] x X6		1.16%	1.16%	1.16%	1.16%	1.16%	1.16%	1.16%	1.16%	1.16%	1.16%	1.16%	1.16%	1.16%	1.16%	1.16%	1.16%	1.16%	1.16%	1.16%	1.16%			
The number of sickened foreign tourist		person	X8	X2 x X7		23,275	23,275	23,275	23,275	23,275	23,275	23,275	23,275	23,275	23,275	23,275	23,275	23,275	23,275	23,275	23,275	23,275	23,275	23,275	23,275			
Tourist expenditure	857,000 IDR / day / per Average length of episode 3 day	Mill IDR	X9	X8 x (Daily expenditure of a foreign tourist) x (Average length of episode)	2,352,730	59,840	59,840	59,840	59,840	59,840	59,840	59,840	59,840	59,840	59,840	59,840	59,840	59,840	59,840	59,840	59,840	59,840	59,840	59,840	59,840			
Increased tourist expenditure	Without case - With case	Mill IDR	X10	X5 - X9	933,523	32,726	32,726	32,726	32,726	32,726	32,726	32,726	32,726	32,726	32,726	32,726	32,726	32,726	32,726	32,726	32,726	32,726	32,726	32,726	32,726			
<b>Increased tourist expenditure owing to sanitation</b>	Attributable rate to sanitation 5%	Mill IDR	X	X10 x (Attributable rate to sanitation)	<b>46,676</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>	<b>1,636</b>			
<b>Benefit (Grand total)</b>					Mill IDR		Total of up to "X" from "L"	<b>118,772,199</b>	<b>3,528,067</b>	<b>3,530,483</b>	<b>3,532,769</b>	<b>3,534,924</b>	<b>3,915,047</b>	<b>3,538,842</b>	<b>3,540,605</b>	<b>3,542,237</b>	<b>3,543,739</b>	<b>3,545,110</b>	<b>3,546,351</b>	<b>3,547,461</b>	<b>3,776,619</b>	<b>3,549,290</b>	<b>3,550,008</b>	<b>3,550,596</b>	<b>3,551,053</b>	<b>3,551,379</b>	<b>3,551,575</b>	<b>3,929,739</b>

**Table S/R-E2-3 Present Value of Cost and Benefit for Economic Analysis (1/2)**

Discount rate =		12 %																		
Discount rate by each year		1.000	0.893	0.797	0.712	0.636	0.567	0.507	0.452	0.404	0.361	0.322	0.287	0.257	0.229	0.205	0.183	0.163	0.146	
<b>(1) Cost</b>																				
(Short-term & Medium-term plan)																				
Unit : Million IDR																				
Items	Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>1. Off-site and On-site Development Plan</b>																				
<b>(1) Construction Costs</b>																				
Construction Cost for Sewerage Development Plan	Future Value	32,029,287	2,031,951	902,889	2,135,654	1,042,432	2,135,654	902,889	1,483,450	553,390	832,491	1,170,945	1,575,756	2,011,763	2,015,455	2,662,123	1,547,865	2,541,862	989,215	165,523
	Present value	12,379,150	2,031,951	806,151	1,702,530	741,982	1,357,246	512,324	751,562	250,325	336,229	422,255	507,351	578,334	517,317	610,090	316,724	464,389	161,362	24,107
Construction Cost for On-site STPs Development Plans	Future Value	932,447	314,016	19,960	0	0	0	0	0	0	73,955	73,955	67,338	89,766	2,398	0	0	0	0	0
	Present value	454,237	314,016	17,822	0	0	0	0	0	0	29,869	26,669	21,681	25,806	616	0	0	0	0	0
Sub-total	Future Value	32,961,734	2,345,967	922,849	2,135,654	1,042,432	2,135,654	902,889	1,483,450	553,390	906,447	1,244,901	1,643,094	2,101,529	2,017,853	2,662,123	1,547,865	2,541,862	989,215	165,523
	Present value	12,833,387	2,345,967	823,973	1,702,530	741,982	1,357,246	512,324	751,562	250,325	366,099	448,924	529,032	604,139	517,933	610,090	316,724	464,389	161,362	24,107
<b>(2) O&amp;M Costs</b>																				
O&M Cost for Sewerage Development Plan	Future Value	15,513,998	0	25,316	50,633	75,949	101,266	126,582	151,898	177,215	202,531	227,848	263,328	281,725	311,509	341,294	371,078	409,696	448,313	486,930
	Present value	1,809,361	0	22,604	40,364	54,059	64,356	71,826	76,956	80,163	81,799	82,164	84,784	80,989	79,957	78,216	75,930	74,850	73,130	70,919
O&M Cost for On-site STPs Development Plans	Future Value	1,107,451	1,872	9,226	18,179	19,323	20,433	21,508	22,547	23,550	24,880	26,168	27,285	28,533	29,608	30,611	31,558	32,327	33,027	33,658
	Present value	195,977	1,872	8,238	14,492	13,754	12,985	12,204	11,423	10,653	10,049	9,436	8,785	8,203	7,600	7,015	6,457	5,906	5,387	4,902
Sub-total	Future Value	16,621,448	1,872	34,543	68,812	95,272	121,698	148,090	174,446	200,765	227,411	254,015	290,612	310,258	341,118	371,905	402,636	442,022	481,340	520,588
	Present value	2,005,338	1,872	30,842	54,856	67,813	77,342	84,030	88,380	90,816	91,848	91,601	93,569	89,192	87,556	85,231	82,387	80,756	78,517	75,821
<b>2. Introduction of regular de-sludging system</b>																				
Cost of regular de-sludging from septic tanks	Future Value	10,840,733	0	117,830	137,177	155,725	173,672	191,024	207,790	223,975	239,740	255,048	266,926	282,435	294,485	305,640	316,143	323,096	329,154	334,327
	Present value	1,842,135	0	105,205	109,357	110,842	110,371	108,392	105,273	101,315	96,827	91,973	85,943	81,193	75,587	70,045	64,689	59,029	53,692	48,693
<b>3. Introduction of appropriate O&amp;M for ITP</b>																				
Cost of regular de-sludging from ITP	Future Value	1,790,272	0	14,609	16,942	19,203	21,409	23,557	25,642	27,659	31,435	35,092	38,622	42,019	45,273	48,348	51,264	54,012	56,587	58,981
	Present value	267,602	0	13,044	13,506	13,668	13,606	13,367	12,991	12,512	12,696	12,654	12,435	12,079	11,621	11,080	10,490	9,868	9,231	8,590
<b>4. Improvement of the structure of septic tank</b>																				
Cost of upgrading CST to MST	Future Value	3,503,800	597,464	616,512	134,053	129,929	128,075	126,222	124,368	122,515	197,559	194,211	160,607	198,449	163,948	155,316	149,109	111,515	101,821	92,126
	Present value	2,035,886	597,464	550,457	106,866	92,481	81,394	71,622	63,009	55,419	79,791	70,034	51,711	57,049	42,081	35,594	30,511	20,373	16,609	13,418
<b>Cost (total)</b>	<b>Future Value</b>	<b>65,717,987</b>	<b>2,945,303</b>	<b>1,706,344</b>	<b>2,492,638</b>	<b>1,442,560</b>	<b>2,580,508</b>	<b>1,391,782</b>	<b>2,015,695</b>	<b>1,128,304</b>	<b>1,602,592</b>	<b>1,983,267</b>	<b>2,399,861</b>	<b>2,934,690</b>	<b>2,862,678</b>	<b>3,543,332</b>	<b>2,467,016</b>	<b>3,472,507</b>	<b>1,958,116</b>	<b>1,171,545</b>
	<b>Present value</b>	<b>18,984,347</b>	<b>2,945,303</b>	<b>1,523,521</b>	<b>1,987,116</b>	<b>1,026,786</b>	<b>1,639,960</b>	<b>789,735</b>	<b>1,021,214</b>	<b>510,387</b>	<b>647,260</b>	<b>715,186</b>	<b>772,691</b>	<b>843,653</b>	<b>734,778</b>	<b>812,040</b>	<b>504,800</b>	<b>634,414</b>	<b>319,411</b>	<b>170,629</b>

**(2) Benefit**

(Short-term & Medium-term plan)

Unit : Million IDR

Items	Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>1. Effect of reduction in wastewater treatment cost</b>																				
(1) Reduced cost of regular de-sludging from septic tanks	Future Value	2,473,234	0	1,766	3,520	5,797	8,571	11,822	15,526	19,661	23,461	27,510	33,205	37,178	42,763	48,609	54,701	62,300	70,193	78,359
	Present value	245,586	0	1,577	2,806	4,126	5,447	6,708	7,866	8,894	9,475	9,920	10,691	10,688	10,976	11,140	11,193	11,382	11,450	11,413
(2) Reduced cost of upgrading to modified septic tank	Future Value	2,862,290	0	54,105	8,566	11,638	14,709	17,781	20,853	23,925	42,786	47,654	54,850	58,771	64,895	71,020	77,144	85,012	92,880	100,748
	Present value	376,940	0	48,308	6,828	8,283	9,348	10,090	10,565	10,822	17,280	17,185	17,660	16,895	16,657	16,276	15,785	15,531	15,151	14,673
(3) Reduced O&M cost of ITP	Future Value	3,843,878	0	6,644	13,504	20,546	27,782	35,212	42,836	50,654	58,304	66,129	74,127	82,300	90,648	99,106	107,730	116,518	125,471	134,589
	Present value	484,291	0	5,933	10,765	14,624	17,656	19,980	21,702	22,913	23,548	23,847	23,867	23,659	23,267	22,713	22,044	21,287	20,467	19,602
(4) Reduced construction cost and O&M cost of sludge treatment plants	Future Value	4,056,640	228,178	6,780	10,571	14,361	18,152	21,943	25,734	407,624	33,316	37,107	42,710	45,763	50,532	55,301	60,069	294,374	72,322	78,449
	Present value	772,892	228,178	6,053	8,427	10,222	11,536	12,451	13,038	184,388	13,456	13,381	13,751	13,156	12,970	12,673	12,291	53,781	11,797	11,426
<b>2. Effect of improvement in public sanitation</b>																				
(1) Reduced medical treatment cost by reducing the number of patients suffering from waterborne disease	Future Value	1,126,077	0	3,412	5,319	7,227	9,134	11,042	12,950	14,857	16,765	18,672	21,492	23,028	25,428	27,828	30,227	33,310	36,393	39,476
	Present value	144,632	0	3,046	4,240	5,144	5,805	6,265	6,561	6,721	6,771	6,733	6,920	6,620	6,527	6,377	6,185	6,086	5,936	5,749
(2) Increased benefit by reduction of absence from work due to waterborne disease	Future Value	331,619	0	1,005	1,566	2,128	2,690	3,252	3,814	4,375	4,937	5,499	6,329	6,782	7,488	8,195	8,902	9,810	10,717	11,625
	Present value	42,593	0	897	1,249	1,515	1,710	1,845	1,932	1,979	1,994	1,983	2,038	1,950	1,922	1,878	1,821	1,792	1,748	1,693
(3) Increased economic value by saving deaths from waterborne disease	Future Value	54,078,945	0	163,838	255,448	347,059	438,670	530,281	621,891	713,502	805,113	896,724	1,032,129	1,105,913	1,221,154	1,336,395	1,451,637	1,599,690	1,747,744	1,895,798
	Present value	6,945,846	0	146,284	203,642	247,030	278,783	300,895	315,070	322,752	325,172	323,368	332,318	317,924	313,440	306,267	297,034	292,257	285,095	276,112
<b>3. Effect on improvement of the living environment</b>																				
(1) Reduced cost of covering small and medium-sized open channels	Future Value	2,256,131	0	138,117	133,685	130,283	126,648	123,163	119,820	116,611	114,419	111,611	168,074	81,791	134,540	132,499	129,597	168,667	165,053	161,553
	Present value	923,223	0	123,319	106,573	92,733	80,487	69,886	60,704	52,749	46,212	40,248	54,115	23,513	34,533	30,365	26,518	30,815	26,924	23,529
(2) Reduced cost of dredging open channels	Future Value	3,442,805	0	12,508	19,193	25,707	32,039	38,197	44,188	50,019	55,740	61,320	69,724	73,814	80,541	87,166	93,646	102,079	110,332	118,409
	Present value	462,628	0	11,168	15,300	18,298	20,362	21,674	22,387	22,626	22,512	22,113	22,449	21,220	20,673	19,976	19,162	18,649	17,997	17,246
<b>4. Effect on improvement in quality of public waters</b>																				
Reduced cost of purifying water at waterworks facilities	Future Value	28,046,538	0	9,304	29,014	59,128	99,648	150,573	211,903	283,638	332,151	383,416	456,816	506,087	577,168	651,711	729,717	828,173	931,077	1,038,429
	Present value	3,053,862	0	8,307	23,130	42,086	63,328	85,439	107,357	128,303	134,150	138,264	147,083	145,488	148,145	149,355	149,315	151,304	151,879	151,241
<b>5. Effect of rise in land value</b>																				
Increased value of land	Future Value	15,393,191	0	1,626,104	868,952	846,837	823,209	800,557	778,827	757,970	743,727	725,473	1,092,483	531,641	874,511	861,243	842,384	1,096,335	1,072,842	1,050,096
	Present value	6,651,256	0	1,451,879	692,723	602,762	523,164	454,258	394,578	342,867	300,379	261,613	351,750	152,834	224,465	197,375	172,368	200,296	175,004	152,941
<b>6. Effect of tourism recuperation</b>																				
(1) Increased tourism income by improving hotel occupancy	Future Value	814,175	0	2,958	4,539	6,079	7,577	9,033	10,450	11,829	13,182	14,501	16,489	17,456	19,047	20,613	22,146	24,140	26,092	28,002
	Present value	109,405	0	2,641	3,618	4,327	4,815	5,126	5,294	5,351	5,324	5,229	5,309	5,018	4,889	4,724	4,531	4,410	4,256	4,078
(2) Increased tourist expenditure by decreasing rate of water borne disease	Future Value	46,676	0	141	220	300	379	458	537	616	695	774	891	955	1,054	1,153	1,253	1,381	1,508	1,636
	Present value	5,995	0	126	176	213	241	260	272	279	281	279	287	274	271	264	256	252	246	238
<b>Benefit (total)</b>	<b>Future Value</b>	<b>11</b>																		

**Table S/R-E2-3 Present Value of Cost and Benefit for Economic Analysis (2/2)**

Discount rate =	12 %																					
Discount rate by each year		0.130	0.116	0.104	0.093	0.083	0.074	0.066	0.059	0.053	0.047	0.042	0.037	0.033	0.030	0.027	0.024	0.021	0.019	0.017	0.015	

**(1) Cost**

(Short-term & Medium-term plan)

Unit : Million IDR

Items	Total	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
<b>1. Off-site and On-site Development Plan</b>																					
<b>(1) Construction Costs</b>																					
Construction Cost for Sewerage Development Plan	Future Value	32,029,287	133,765	133,765	124,449	112,220	846,693	1,019,848	0	0	0	0	0	0	530,539	1,230,119	941,620	254,962	0	0	0
	Present value	12,379,150	17,395	15,531	12,901	10,387	69,973	75,253	0	0	0	0	0	0	17,708	36,660	25,055	6,057	0	0	0
Construction Cost for On-site STPs Development Plans	Future Value	932,447	0	2,854	61,849	16,003	53,212	0	0	0	0	0	0	61,256	41,869	4,001	50,015	0	0	0	0
	Present value	454,237	0	331	6,412	1,481	4,398	0	0	0	0	0	0	2,290	1,398	119	1,331	0	0	0	0
Sub-total	Future Value	32,961,734	133,765	136,619	186,298	128,223	899,904	1,019,848	0	0	0	0	0	61,256	572,409	1,234,120	991,635	254,962	0	0	0
	Present value	12,833,387	17,395	15,862	19,313	11,868	74,370	75,253	0	0	0	0	0	2,290	19,106	36,779	26,386	6,057	0	0	0
<b>(2) O&amp;M Costs</b>																					
O&M Cost for Sewerage Development Plan	Future Value	15,513,998	516,714	546,499	568,050	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213	578,213
	Present value	1,809,361	67,193	63,452	58,888	53,519	47,785	42,665	38,094	34,012	30,368	27,114	24,209	21,616	19,300	17,232	15,385	13,737	12,265	10,951	9,778
O&M Cost for On-site STPs Development Plans	Future Value	1,107,451	33,658	33,658	33,658	33,658	33,658	33,658	33,658	33,658	33,658	33,658	33,658	33,658	33,658	33,658	33,658	33,658	33,658	33,658	33,658
	Present value	195,977	4,377	3,908	3,489	3,115	2,782	2,484	2,217	1,980	1,768	1,578	1,409	1,258	1,123	1,003	896	800	714	637	569
Sub-total	Future Value	16,621,448	550,372	580,157	601,708	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871	611,871
	Present value	2,005,338	71,570	67,360	62,377	56,635	50,567	45,149	40,311	35,992	32,136	28,693	25,619	22,874	20,423	18,235	16,281	14,537	12,979	11,589	10,347
<b>2. Introduction of regular de-sludging system</b>																					
Cost of regular de-sludging from septic tanks	Future Value	10,840,733	334,327	334,327	334,327	334,327	334,327	334,327	334,327	334,327	334,327	334,327	334,327	334,327	334,327	334,327	334,327	334,327	334,327	334,327	334,327
	Present value	1,842,135	43,476	38,818	34,659	30,945	27,630	24,669	22,026	19,666	17,559	15,678	13,998	12,498	11,159	9,964	8,896	7,943	7,092	6,332	5,654
<b>3. Introduction of appropriate O&amp;M for ITP</b>																					
Cost of regular de-sludging from ITP	Future Value	1,790,272	58,981	58,981	58,981	58,981	58,981	58,981	58,981	58,981	58,981	58,981	58,981	58,981	58,981	58,981	58,981	58,981	58,981	58,981	58,981
	Present value	267,602	7,670	6,848	6,114	5,459	4,874	4,352	3,886	3,469	3,098	2,766	2,469	2,205	1,969	1,758	1,569	1,401	1,251	1,117	997
<b>4. Improvement of the structure of septic tank</b>																					
Cost of upgrading CST to MST	Future Value	3,503,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Present value	2,035,886	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Cost (total)</b>	Future Value	65,717,987	1,077,446	1,110,084	1,181,314	1,133,402	1,905,084	2,025,027	1,005,179	1,005,179	1,005,179	1,005,179	1,005,179	1,066,435	1,577,588	2,239,299	1,996,815	1,260,141	1,005,179	1,005,179	1,005,179
	Present value	18,984,347	140,111	128,888	122,463	104,907	157,441	149,423	66,223	59,128	52,793	47,136	42,086	39,867	52,657	66,735	53,133	29,938	21,322	19,038	16,998

**(2) Benefit**

(Short-term & Medium-term plan)

Unit : Million IDR

Items	Total	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
<b>1. Effect of reduction in wastewater treatment cost</b>																					
(1) Reduced cost of regular de-sludging from septic tanks	Future Value	2,473,234	80,906	83,322	85,608	87,762	89,787	91,680	93,443	95,076	96,578	97,949	99,190	100,300	101,279	102,128	102,847	103,434	103,891	104,218	104,414
	Present value	245,586	10,521	9,674	8,875	8,123	7,420	6,765	6,156	5,593	5,072	4,593	4,153	3,750	3,380	3,044	2,737	2,457	2,204	1,974	1,766
(2) Reduced cost of upgrading to modified septic tank	Future Value	2,862,290	100,748	100,748	100,748	100,748	100,748	100,748	100,748	100,748	100,748	100,748	100,748	100,748	100,748	100,748	100,748	100,748	100,748	100,748	100,748
	Present value	376,940	13,101	11,697	10,444	9,325	8,326	7,434	6,637	5,926	5,291	4,724	4,218	3,766	3,363	3,002	2,681	2,394	2,137	1,908	1,704
(3) Reduced O&M cost of ITP	Future Value	3,843,878	134,589	134,589	134,589	134,589	134,589	134,589	134,589	134,589	134,589	134,589	134,589	134,589	134,589	134,589	134,589	134,589	134,589	134,589	134,589
	Present value	484,291	17,502	15,627	13,952	12,457	11,123	9,931	8,867	7,917	7,069	6,311	5,635	5,031	4,492	4,011	3,581	3,198	2,855	2,549	2,276
(4) Reduced construction cost and O&M cost of sludge treatment plants	Future Value	4,056,640	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449	78,449
	Present value	772,892	10,201	9,108	8,133	7,261	6,473	5,789	5,168	4,615	4,120	3,679	3,285	2,933	2,623	2,338	2,087	1,864	1,664	1,486	1,327
<b>2. Effect of improvement in public sanitation</b>																					
(1) Reduced medical treatment cost by reducing the number of patients suffering from waterborne disease	Future Value	1,126,077	39,476	39,476	39,476	39,476	39,476	39,476	39,476	39,476	39,476	39,476	39,476	39,476	39,476	39,476	39,476	39,476	39,476	39,476	39,476
	Present value	144,632	5,133	4,583	4,092	3,654	3,262	2,913	2,601	2,322	2,073	1,851	1,653	1,476	1,318	1,176	1,050	938	837	748	668
(2) Increased benefit by reduction of absence from work due to waterborne disease	Future Value	331,619	11,625	11,625	11,625	11,625	11,625	11,625	11,625	11,625	11,625	11,625	11,625	11,625	11,625	11,625	11,625	11,625	11,625	11,625	11,625
	Present value	42,593	1,512	1,350	1,205	1,076	961	858	766	684	611	545	487	435	388	346	309	276	247	220	197
(3) Increased economic value by saving deaths from waterborne disease	Future Value	54,078,945	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798	1,895,798
	Present value	6,945,846	246,529	220,115	196,531	175,474	156,674	139,887	124,899	111,517	99,569	88,901	79,376	70,871	63,278	56,498	50,445	45,040	40,214	35,906	32,059
<b>3. Effect on improvement of the living environment</b>																					
(1) Reduced cost of covering small and medium-sized open channels	Future Value	2,256,131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Present value	923,223	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(2) Reduced cost of dredging open channels	Future Value	3,442,805	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409	118,409
	Present value	462,628	15,398	13,748	12,275	10,960	9,786	8,737	7,801	6,965	6,219	5,553	4,958	4,427	3,952	3,529	3,151	2,813	2,512	2,243	2,002
<b>4. Effect on improvement in quality of public waters</b>																					
Reduced cost of purifying water at waterworks facilities	Future Value	28,046,538	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429	1,038,429
	Present value	3,053,862	135,037	120,569	107,651	96,117	85,818	76,624	68,414	61,084	54,539	48,696	43,478	38,820	34,661	30,947	27,631	24,671	22,027	19,667	17,560
<b>5. Effect of rise in land value</b>																					
Increased value of land	Future Value	15,393,191	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Present value	6,651,256	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>6. Effect of tourism recuperation</b>																					
(1) Increased tourism income by improving hotel occupancy	Future Value	814,175	28,002	28,002	28,002	28,002	28,002	28,002	28,002	28,002	28,002	28,002	28,002	28,002	28,002	28,002	28,002	28,002	28,002	28,002	28,002
	Present value	109,405	3,641	3,251	2,903	2,592	2,314	2,066	1,845	1,647	1,471	1,313	1,172	1,047	935	835	745	665	594	530	474
(2) Increased tourist expenditure by decreasing rate of water borne disease	Future Value	46,676	1,636	1,636	1,636	1,636	1,636	1,636	1,636	1,636	1,636	1,636	1,636	1,636	1,636	1,636	1,636	1,636	1,636	1,636	1,636
	Present value	5,995	213	190	170	151	135	121	108	96	86	77	69	61	55	49	44	39	35	31	28
<b>Benefit (total)</b>	Future Value	118,772,199	3,528,067	3,530,483	3,532,769	3,534,924	3,915,047	3,538,842	3,540,605	3,542,237	3,543,739	3,545,110	3,								

## E2.6.2 NPV, B/C Ratio and EIRR

**Table S/R-E-4 Results of Economic Analysis (1/2)**

Calculation for NPV, B/C and EIRR on Economic Analysis

Unit : Million IDR

Year	Future Value						Present Value			
	Cost				Benefit	Benefit-Cost (Cash Flow)	Discount Rate=12%			
	Cnstruction Cost	O&M Cost	Additional Costs *	Total			Cost	Benefit	NPV	
1	2013	2,345,967	1,872	597,464	2,945,303	228,178	-2,717,124	2,945,303	228,178	-2,717,124
2	2014	922,849	34,543	748,952	1,706,344	2,026,683	320,339	1,523,521	1,809,538	286,017
3	2015	2,135,654	68,812	288,172	2,492,638	1,354,096	-1,138,541	1,987,116	1,079,477	-907,638
4	2016	1,042,432	95,272	304,856	1,442,560	1,477,089	34,529	1,026,786	1,051,363	24,577
5	2017	2,135,654	121,698	323,156	2,580,508	1,609,209	-971,299	1,639,960	1,022,682	-617,278
6	2018	902,889	148,090	340,803	1,391,782	1,753,314	361,532	789,735	994,878	205,143
7	2019	1,483,450	174,446	357,800	2,015,695	1,909,329	-106,366	1,021,214	967,326	-53,889
8	2020	553,390	200,765	374,149	1,128,304	2,455,281	1,326,977	510,387	1,110,644	600,257
9	2021	906,447	227,411	468,735	1,602,592	2,244,595	642,002	647,260	906,554	259,294
10	2022	1,244,901	254,015	484,351	1,983,267	2,396,390	413,123	715,186	864,162	148,976
11	2023	1,643,094	290,612	466,154	2,399,861	3,069,319	669,459	772,691	988,239	215,548
12	2024	2,101,529	310,258	522,903	2,934,690	2,571,479	-363,211	843,653	739,239	-104,415
13	2025	2,017,853	341,118	503,707	2,862,678	3,189,768	327,091	734,778	818,734	83,956
14	2026	2,662,123	371,905	509,304	3,543,332	3,400,839	-142,493	812,040	779,385	-32,656
15	2027	1,547,865	402,636	516,515	2,467,016	3,609,152	1,142,135	504,800	738,504	233,703
16	2028	2,541,862	442,022	488,623	3,472,507	4,421,788	949,281	634,414	807,844	173,430
17	2029	989,215	481,340	487,561	1,958,116	4,462,624	2,504,507	319,411	727,951	408,539
18	2030	165,523	520,588	485,434	1,171,545	4,737,170	3,565,625	170,629	689,942	519,313
19	2031	133,765	550,372	393,308	1,077,446	3,528,067	2,450,622	140,111	458,788	318,678
20	2032	136,619	580,157	393,308	1,110,084	3,530,483	2,420,400	128,888	409,913	281,025
21	2033	186,298	601,708	393,308	1,181,314	3,532,769	2,351,455	122,463	366,231	243,768
22	2034	128,223	611,871	393,308	1,133,402	3,534,924	2,401,521	104,907	327,191	222,284
23	2035	899,904	611,871	393,308	1,905,084	3,915,047	2,009,963	157,441	323,549	166,108
24	2036	1,019,848	611,871	393,308	2,025,027	3,538,842	1,513,814	149,423	261,124	111,701
25	2037	0	611,871	393,308	1,005,179	3,540,605	2,535,426	66,223	233,262	167,039
26	2038	0	611,871	393,308	1,005,179	3,542,237	2,537,058	59,128	208,366	149,238
27	2039	0	611,871	393,308	1,005,179	3,543,739	2,538,560	52,793	186,120	133,327
28	2040	0	611,871	393,308	1,005,179	3,545,110	2,539,931	47,136	166,243	119,106
29	2041	0	611,871	393,308	1,005,179	3,546,351	2,541,172	42,086	148,483	106,397
30	2042	61,256	611,871	393,308	1,066,435	3,547,461	2,481,026	39,867	132,616	92,749
31	2043	572,409	611,871	393,308	1,577,588	3,776,619	2,199,031	52,657	126,056	73,399
32	2044	1,234,120	611,871	393,308	2,239,299	3,549,290	1,309,991	66,735	105,775	39,040
33	2045	991,635	611,871	393,308	1,996,815	3,550,008	1,553,193	53,133	94,461	41,328
34	2046	254,962	611,871	393,308	1,260,141	3,550,596	2,290,454	29,938	84,354	54,416
35	2047	0	611,871	393,308	1,005,179	3,551,053	2,545,873	21,322	75,326	54,004
36	2048	0	611,871	393,308	1,005,179	3,551,379	2,546,200	19,038	67,261	48,224
37	2049	0	611,871	393,308	1,005,179	3,551,575	2,546,396	16,998	60,058	43,060
38	2050	0	611,871	393,308	1,005,179	3,929,739	2,924,560	15,177	59,333	44,156
Total		32,961,734	16,621,448	16,134,804	65,717,987	118,772,199	53,054,212	18,984,347	20,219,151	<b>1,234,803</b>

\* Additional costs are costs of On-site De-sludging and Upgrading to MST as borne by residents

<b>EIRR=</b>	<b>13.9%</b>	<b>B/C=</b>	<b>1.07</b>
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**Table S/R-E-2-4 Results of Economic Analysis (2/2)**

**Relationship between NPV and Discount Rate on Economic Analysis**

DR (%)	CM COST (Mill. IDR)	CM BNFT (Mill. IDR)	NPV (Mill. IDR)	B/C
0	65,717,987	118,772,199	53,054,212	1.81
1	56,308,337	96,942,758	40,634,421	1.72
2	48,825,509	80,044,819	31,219,310	1.64
3	42,810,482	66,838,939	24,028,457	1.56
4	37,924,213	56,420,109	18,495,896	1.49
5	33,914,226	48,122,659	14,208,433	1.42
6	30,590,957	41,453,341	10,862,385	1.36
7	27,810,887	36,043,956	8,233,069	1.30
8	25,464,447	31,617,604	6,153,157	1.24
9	23,467,285	27,964,496	4,497,211	1.19
10	21,753,919	24,924,507	3,170,589	1.15
11	20,273,090	22,374,515	2,101,425	1.10
12	18,984,347	20,219,151	1,234,803	1.07
13	17,855,508	18,384,008	528,500	1.03
14	16,860,768	16,810,617	-50,151	1.00
15	15,979,277	15,452,706	-526,571	0.97
16	15,194,060	14,273,400	-920,659	0.94
17	14,491,200	13,243,117	-1,248,083	0.91
18	13,859,210	12,337,965	-1,521,245	0.89
19	13,288,541	11,538,521	-1,750,020	0.87
20	12,771,207	10,828,902	-1,942,306	0.85

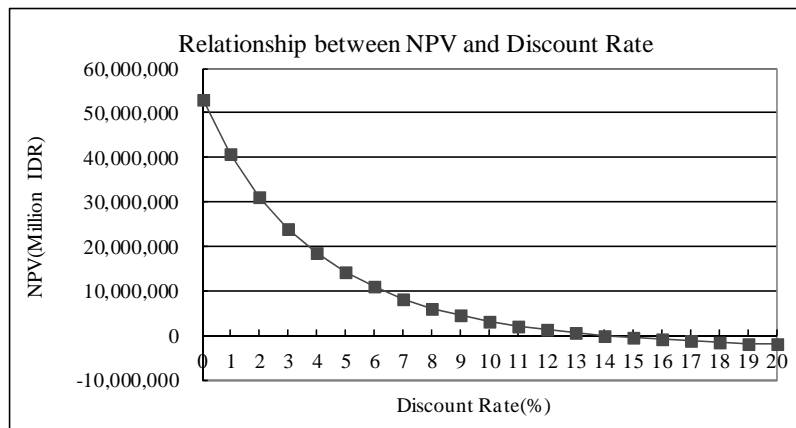
DR: Discount Rate(%)

CM COST: Cumulative Cost

CM BNFT: Cumulative Benefit

NPV: Net Present Value

B/C: Benefit Cost Ratio











**Table S/R-E3-3 Results of Financial Analysis (Zone 1/Case 1) (1/2)**

**Calculation for NPV, B/C and FIRR on Financial Analysis**

Zone 1/Case 1

Unit : Million IDR

Year	Future Value						Present Value		
	Cost			Benefit	Benefit-Cost (Cash Flow)	Discount Rate=1.15%			
	Cnstruction Cost	O&M Cost	Total			Cost	Benefit	NPV	
1	2013	373,014	0	373,014	0	-373,014	373,014	0	-373,014
2	2014	148,352	12,495	160,846	15,197	-145,649	159,017	15,024	-143,993
3	2015	390,491	24,989	415,480	30,428	-385,053	406,086	29,740	-376,347
4	2016	148,352	37,484	185,835	45,691	-140,144	179,569	44,151	-135,418
5	2017	390,491	49,978	440,469	60,989	-379,481	420,777	58,262	-362,515
6	2018	148,352	62,473	210,824	76,319	-134,505	199,109	72,078	-127,031
7	2019	148,352	74,967	223,319	91,683	-131,636	208,511	85,604	-122,908
8	2020	17,477	87,462	104,938	107,080	2,142	96,866	98,843	1,977
9	2021	17,477	99,956	117,433	122,511	5,078	107,167	111,801	4,634
10	2022	17,477	112,451	129,927	137,975	8,047	117,222	124,482	7,260
11	2023	17,477	124,945	142,422	153,472	11,050	127,033	136,890	9,856
12	2024	0	124,945	124,945	153,639	28,694	110,178	135,480	25,302
13	2025	14,528	124,945	139,474	153,806	14,332	121,591	134,085	12,494
14	2026	0	124,945	124,945	153,972	29,027	107,687	132,705	25,018
15	2027	0	124,945	124,945	154,139	29,194	106,463	131,338	24,875
16	2028	0	124,945	124,945	154,306	29,361	105,252	129,985	24,733
17	2029	0	124,945	124,945	154,473	29,528	104,056	128,646	24,591
18	2030	0	124,945	124,945	154,640	29,694	102,873	127,321	24,449
19	2031	0	124,945	124,945	154,640	29,694	101,703	125,874	24,171
20	2032	0	124,945	124,945	154,640	29,694	100,547	124,443	23,896
21	2033	0	124,945	124,945	154,640	29,694	99,404	123,028	23,624
22	2034	0	124,945	124,945	154,640	29,694	98,273	121,629	23,356
23	2035	290,567	124,945	415,512	154,640	-260,873	323,098	120,246	-202,852
24	2036	0	124,945	124,945	154,640	29,694	96,051	118,879	22,828
25	2037	0	124,945	124,945	154,640	29,694	94,959	117,527	22,568
26	2038	0	124,945	124,945	154,640	29,694	93,880	116,191	22,311
27	2039	0	124,945	124,945	154,640	29,694	92,812	114,870	22,058
28	2040	0	124,945	124,945	154,640	29,694	91,757	113,564	21,807
29	2041	0	124,945	124,945	154,640	29,694	90,714	112,273	21,559
30	2042	0	124,945	124,945	154,640	29,694	89,683	110,997	21,314
31	2043	0	124,945	124,945	154,640	29,694	88,663	109,735	21,072
32	2044	0	124,945	124,945	154,640	29,694	87,655	108,487	20,832
33	2045	72,642	124,945	197,587	154,640	-42,947	137,041	107,254	-29,787
Total		2,195,048	3,435,992	5,631,040	4,239,912	-1,391,128	4,838,713	3,441,433	<b>-1,397,280</b>

<b>FIRR=</b>	<b>-9.2%</b>	<b>B/C=</b>	<b>0.71</b>
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**Table S/R-E3-3 Results of Financial Analysis (Zone 1/Case 1) (2/2)**

**Relationship between NPV and Discount Rate on Financial Analysis**

Zone 1/Case 1

DR (%)	CM COST (Mill. IDR)	CM BNFT (Mill. IDR)	NPV (Mill. IDR)	B/C
0	5,631,040	4,239,912	-1,391,128	0.75
1	4,931,214	3,534,151	-1,397,063	0.72
2	4,366,359	2,970,558	-1,395,801	0.68
3	3,906,402	2,517,166	-1,389,236	0.64
4	3,528,541	2,149,751	-1,378,790	0.61
5	3,215,379	1,849,849	-1,365,529	0.58
6	2,953,563	1,603,305	-1,350,258	0.54
7	2,732,788	1,399,205	-1,333,583	0.51
8	2,545,047	1,229,082	-1,315,965	0.48
9	2,384,087	1,086,334	-1,297,753	0.46
10	2,244,990	965,777	-1,279,213	0.43
11	2,123,870	863,324	-1,260,545	0.41
12	2,017,631	775,729	-1,241,903	0.38
13	1,923,801	700,400	-1,223,401	0.36
14	1,840,384	635,259	-1,205,125	0.35
15	1,765,767	578,626	-1,187,141	0.33
16	1,698,635	529,139	-1,169,496	0.31
17	1,637,909	485,687	-1,152,222	0.30
18	1,582,701	447,356	-1,135,344	0.28
19	1,532,273	413,395	-1,118,877	0.27
20	1,486,011	383,180	-1,102,831	0.26

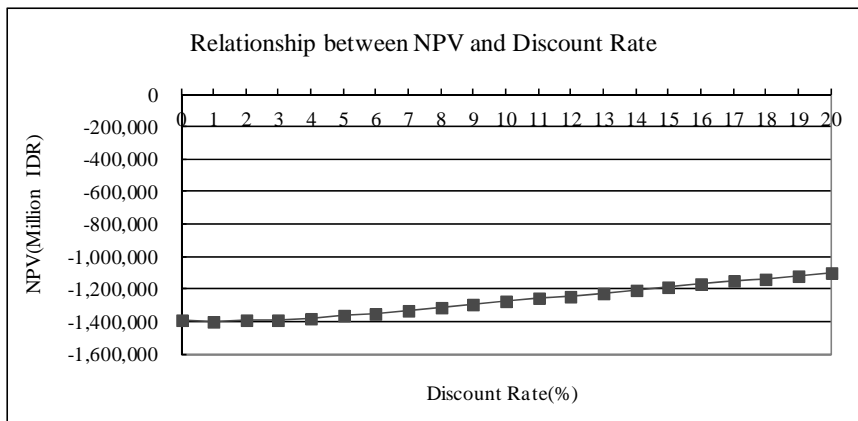
DR: Discount Rate(%)

CM COST: Cumulative Cost

CM BNFT: Cumulative Benefit

NPV: Net Present Value

B/C: Benefit Cost Ratio



**Calculation results on Financial Analysis**

<b>NPV</b>	<b>-1,397,280</b>
<b>B/C</b>	<b>0.71</b>
<b>FIRR</b>	<b>-9.16%</b>

\*Project Discount rate= 1.15%

**Table S/R-E3-4 Results of Financial Analysis (Zone 1/Case 2) (1/2)**

**Calculation for NPV, B/C and FIRR on Financial Analysis**

Zone 1/Case 2

Unit : Million IDR

Year	Future Value					Present Value			
	Cost			Benefit	Benefit-Cost (Cash Flow)	Discount Rate=1.15%			
	Cnstruction Cost	O&M Cost	Total			Cost	Benefit	NPV	
1	2013	373,014	0	373,014	0	-373,014	373,014	0	-373,014
2	2014	148,352	12,495	160,846	15,197	-145,649	159,017	15,024	-143,993
3	2015	390,491	24,989	415,480	30,428	-385,053	406,086	29,740	-376,347
4	2016	148,352	37,484	185,835	59,399	-126,436	179,569	57,396	-122,173
5	2017	390,491	49,978	440,469	79,285	-361,184	420,777	75,740	-345,037
6	2018	148,352	62,473	210,824	99,215	-111,610	199,109	93,702	-105,408
7	2019	148,352	74,967	223,319	154,944	-68,375	208,511	144,670	-63,841
8	2020	17,477	87,462	104,938	180,965	76,027	96,866	167,045	70,179
9	2021	17,477	99,956	117,433	207,043	89,610	107,167	188,944	81,777
10	2022	17,477	112,451	129,927	303,130	173,203	117,222	273,487	156,265
11	2023	17,477	124,945	142,422	337,178	194,756	127,033	300,746	173,713
12	2024	0	124,945	124,945	337,544	212,599	110,178	297,650	187,472
13	2025	14,528	124,945	139,474	439,284	299,811	121,591	382,961	261,370
14	2026	0	124,945	124,945	439,761	314,815	107,687	379,018	271,331
15	2027	0	124,945	124,945	440,237	315,292	106,463	375,115	268,652
16	2028	0	124,945	124,945	440,713	315,768	105,252	371,251	265,999
17	2029	0	124,945	124,945	441,190	316,245	104,056	367,427	263,372
18	2030	0	124,945	124,945	441,666	316,721	102,873	363,642	260,769
19	2031	0	124,945	124,945	441,666	316,721	101,703	359,508	257,805
20	2032	0	124,945	124,945	441,666	316,721	100,547	355,420	254,874
21	2033	0	124,945	124,945	441,666	316,721	99,404	351,379	251,976
22	2034	0	124,945	124,945	441,666	316,721	98,273	347,385	249,111
23	2035	290,567	124,945	415,512	441,666	26,154	323,098	343,435	20,337
24	2036	0	124,945	124,945	441,666	316,721	96,051	339,530	243,479
25	2037	0	124,945	124,945	441,666	316,721	94,959	335,670	240,711
26	2038	0	124,945	124,945	441,666	316,721	93,880	331,854	237,974
27	2039	0	124,945	124,945	441,666	316,721	92,812	328,081	235,268
28	2040	0	124,945	124,945	441,666	316,721	91,757	324,351	232,594
29	2041	0	124,945	124,945	441,666	316,721	90,714	320,663	229,949
30	2042	0	124,945	124,945	441,666	316,721	89,683	317,018	227,335
31	2043	0	124,945	124,945	441,666	316,721	88,663	313,413	224,750
32	2044	0	124,945	124,945	441,666	316,721	87,655	309,850	222,195
33	2045	72,642	124,945	197,587	441,666	244,079	137,041	306,327	169,286
Total		2,195,048	3,435,992	5,631,040	11,072,172	5,441,132	4,838,713	8,867,445	<b>4,028,732</b>

<b>FIRR=</b>	<b>9.66%</b>	<b>B/C=</b>	<b>1.83</b>
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**Table S/R-E3-4 Results of Financial Analysis (Zone 1/Case 2) (2/2)**

**Relationship between NPV and Discount Rate on Financial Analysis**

Zone 1/Case 2

DR (%)	CM COST (Mill. IDR)	CM BNFT (Mill. IDR)	NPV (Mill. IDR)	B/C
0	5,631,040	11,072,172	5,441,132	1.97
1	4,931,214	9,122,794	4,191,580	1.85
2	4,366,359	7,573,947	3,207,589	1.73
3	3,906,402	6,334,868	2,428,466	1.62
4	3,528,541	5,336,847	1,808,306	1.51
5	3,215,379	4,527,578	1,312,199	1.41
6	2,953,563	3,867,013	913,450	1.31
7	2,732,788	3,324,322	591,534	1.22
8	2,545,047	2,875,630	330,583	1.13
9	2,384,087	2,502,351	118,264	1.05
10	2,244,990	2,189,931	-55,060	0.98
11	2,123,870	1,926,911	-196,958	0.91
12	2,017,631	1,704,223	-313,409	0.84
13	1,923,801	1,514,645	-409,156	0.79
14	1,840,384	1,352,400	-487,984	0.73
15	1,765,767	1,212,842	-552,926	0.69
16	1,698,635	1,092,209	-606,426	0.64
17	1,637,909	987,447	-650,462	0.60
18	1,582,701	896,060	-686,641	0.57
19	1,532,273	815,997	-716,276	0.53
20	1,486,011	745,567	-740,444	0.50

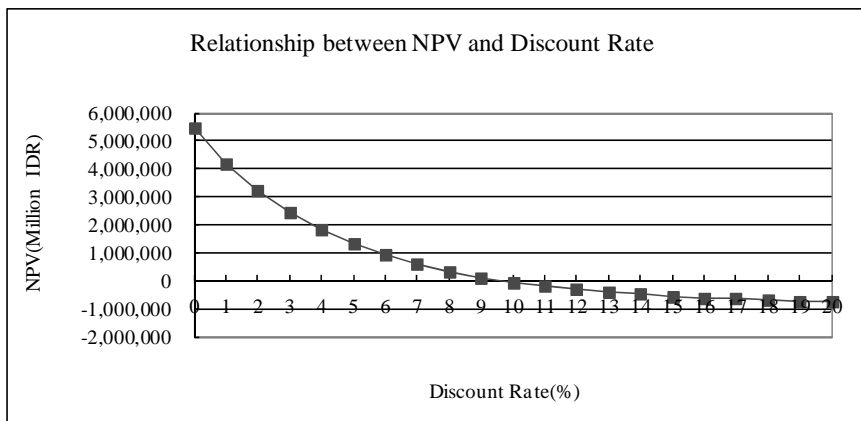
DR: Discount Rate(%)

CM COST: Cumulative Cost

CM BNFT: Cumulative Benefit

NPV: Net Present Value

B/C: Benefit Cost Ratio



**Calculation results on Financial Analysis**

NPV	<b>4,028,732</b>
B/C	<b>1.83</b>
FIRR	<b>9.66%</b>

\*Project Discount rate= 1.15%





**Table S/R-E3-6 Present Value of Cost and Benefit for Financial Analysis (Zone 6)**

Discount rate =	1.15 %																																
Discount rate by each year	1	0.989	0.977	0.966	0.955	0.944	0.934	0.923	0.913	0.902	0.892	0.882	0.872	0.862	0.852	0.842	0.833	0.823	0.814	0.805	0.796	0.787	0.778	0.769	0.760	0.751	0.743	0.734	0.726	0.718	0.710	0.702	0.694

**\*Cost of Zone 6 for Financial Analysis**

Foreign currency loan lending from Central Gov. for Zone 6

Rate of Allocation : 35%

Items		Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Construction Cost	Future Value	2,872,510	384,314	191,222	406,763	243,029	406,763	191,222	406,763	191,222	22,449	22,449	22,449	0	0	18,279	0	0	0	0	0	0	0	0	0	365,588	0	0	0	0	0	0	0	0	
	Present value	2,688,803	384,314	189,048	397,566	234,834	388,577	180,596	379,792	176,513	20,486	20,253	20,023	0	0	15,754	0	0	0	0	0	0	0	0	0	281,045	0	0	0	0	0	0	0	0	
O&M Cost (Annual)	Future Value	4,222,220	0	15,354	30,707	46,061	61,414	76,768	92,121	107,475	122,828	138,182	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535		
	Present value	3,428,335	0	15,179	30,013	44,507	58,668	72,502	86,013	99,208	112,091	124,669	136,946	135,389	133,850	132,328	130,823	129,336	127,866	126,412	124,975	123,554	122,149	120,760	119,387	118,030	116,688	115,362	114,050	112,753	111,471	110,204	108,951	107,712	106,488
Cost (total)	Future Value	7,094,730	384,314	206,575	437,470	289,090	468,177	267,990	498,884	298,697	145,277	160,630	175,984	153,535	153,535	171,815	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535	519,123	153,535	153,535	153,535	153,535	153,535	153,535	153,535	153,535		
	Present value	6,117,138	384,314	204,227	427,579	279,341	447,246	253,098	465,805	275,721	132,577	144,922	156,969	135,389	133,850	148,082	130,823	129,336	127,866	126,412	124,975	123,554	122,149	120,760	119,387	399,076	116,688	115,362	114,050	112,753	111,471	110,204	108,951	107,712	106,488

**\*Benefit (Income) of Zone 6 for Financial Analysis**

Case 1 : Keep current sewerage tariff level Unit : Million IDR

Items		Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Revenue from Sewerage Service	Future Value	3,006,809	0	10,558	21,173	31,845	42,573	53,358	64,200	75,099	86,055	97,067	108,136	108,420	108,704	108,988	109,271	109,555	109,839	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	
	Present value	2,439,294	0	10,438	20,694	30,771	40,670	50,393	59,943	69,322	78,532	87,575	96,452	95,606	94,766	93,933	93,107	92,288	91,475	90,669	89,638	88,619	87,611	86,615	85,630	84,657	83,694	82,743	81,802	80,872	79,953	79,044	78,145	77,257	76,378
Benefit (total)	Future Value	3,006,809	0	10,558	21,173	31,845	42,573	53,358	64,200	75,099	86,055	97,067	108,136	108,420	108,704	108,988	109,271	109,555	109,839	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	110,123	
	Present value	2,439,294	0	10,438	20,694	30,771	40,670	50,393	59,943	69,322	78,532	87,575	96,452	95,606	94,766	93,933	93,107	92,288	91,475	90,669	89,638	88,619	87,611	86,615	85,630	84,657	83,694	82,743	81,802	80,872	79,953	79,044	78,145	77,257	76,378

Case 2 : Raise sewerage tariff Unit : Million IDR

Items		Total	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Revenue from Sewerage Service	Future Value	7,860,524	0	10,558	21,173	41,398	55,345	69,366	108,499	126,917	145,432	213,256	237,575	238,198	310,469	311,279	312,090	312,901	313,712	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	
	Present value	6,292,879	0	10,438	20,694	40,002	52,871	65,511	101,305	117,155	132,719	192,401	211,905	210,046	270,662	268,283	265,924	263,584	261,262	258,959	256,015	253,104	250,227	247,382	244,569	241,789	239,040	236,322	233,635	230,979	228,353	225,757	223,190	220,652	218,144
Benefit (total)	Future Value	7,860,524	0	10,558	21,173	41,398	55,345	69,366	108,499	126,917	145,432	213,256	237,575	238,198	310,469	311,279	312,090	312,901	313,712	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	314,522	
	Present value	6,292,879	0	10,438	20,694	40,002	52,871	65,511	101,305	117,155	132,719	192,401	211,905	210,046	270,662	268,283	265,924	263,584	261,262	258,959	256,015	253,104	250,227	247,382	244,569	241,789	239,040	236,322	233,635	230,979	228,353	225,757	223,190	220,652	218,144



**Table S/R-E3-7 Results of Financial Analysis (Zone 6/Case 1) (1/2)**

**Calculation for NPV, B/C and FIRR on Financial Analysis**

Zone 6/Case 1

Unit : Million IDR

Year	Future Value						Present Value		
	Cost			Benefit	Benefit-Cost (Cash Flow)	Discount Rate=1.15%			
	Cnstruction Cost	O&M Cost	Total			Cost	Benefit	NPV	
1	2013	384,314	0	384,314	0	-384,314	384,314	0	-384,314
2	2014	191,222	15,354	206,575	10,558	-196,017	204,227	10,438	-193,789
3	2015	406,763	30,707	437,470	21,173	-416,297	427,579	20,694	-406,885
4	2016	243,029	46,061	289,090	31,845	-257,245	279,341	30,771	-248,570
5	2017	406,763	61,414	468,177	42,573	-425,604	447,246	40,670	-406,576
6	2018	191,222	76,768	267,990	53,358	-214,631	253,098	50,393	-202,705
7	2019	406,763	92,121	498,884	64,200	-434,684	465,805	59,943	-405,861
8	2020	191,222	107,475	298,697	75,099	-223,598	275,721	69,322	-206,398
9	2021	22,449	122,828	145,277	86,055	-59,222	132,577	78,532	-54,045
10	2022	22,449	138,182	160,630	97,067	-63,564	144,922	87,575	-57,348
11	2023	22,449	153,535	175,984	108,136	-67,848	156,969	96,452	-60,517
12	2024	0	153,535	153,535	108,420	-45,115	135,389	95,606	-39,783
13	2025	0	153,535	153,535	108,704	-44,832	133,850	94,766	-39,083
14	2026	18,279	153,535	171,815	108,988	-62,827	148,082	93,933	-54,149
15	2027	0	153,535	153,535	109,271	-44,264	130,823	93,107	-37,716
16	2028	0	153,535	153,535	109,555	-43,980	129,336	92,288	-37,048
17	2029	0	153,535	153,535	109,839	-43,696	127,866	91,475	-36,391
18	2030	0	153,535	153,535	110,123	-43,412	126,412	90,669	-35,743
19	2031	0	153,535	153,535	110,123	-43,412	124,975	89,638	-35,337
20	2032	0	153,535	153,535	110,123	-43,412	123,554	88,619	-34,935
21	2033	0	153,535	153,535	110,123	-43,412	122,149	87,611	-34,538
22	2034	0	153,535	153,535	110,123	-43,412	120,760	86,615	-34,145
23	2035	0	153,535	153,535	110,123	-43,412	119,387	85,630	-33,757
24	2036	365,588	153,535	519,123	110,123	-409,000	399,076	84,657	-314,419
25	2037	0	153,535	153,535	110,123	-43,412	116,688	83,694	-32,994
26	2038	0	153,535	153,535	110,123	-43,412	115,362	82,743	-32,619
27	2039	0	153,535	153,535	110,123	-43,412	114,050	81,802	-32,248
28	2040	0	153,535	153,535	110,123	-43,412	112,753	80,872	-31,881
29	2041	0	153,535	153,535	110,123	-43,412	111,471	79,953	-31,519
30	2042	0	153,535	153,535	110,123	-43,412	110,204	79,044	-31,160
31	2043	0	153,535	153,535	110,123	-43,412	108,951	78,145	-30,806
32	2044	0	153,535	153,535	110,123	-43,412	107,712	77,257	-30,456
33	2045	0	153,535	153,535	110,123	-43,412	106,488	76,378	-30,110
Total		2,872,510	4,222,220	7,094,730	3,006,809	-4,087,922	6,117,138	2,439,294	<b>-3,677,844</b>

<b>FIRR= No solution</b>	<b>B/C= 0.40</b>
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**Table S/R-E3-7 Results of Financial Analysis (Zone 6/Case 1) (2/2)**

**Relationship between NPV and Discount Rate on Financial Analysis**

Zone 6/Case 1

DR (%)	CM COST (Mill. IDR)	CM BNFT (Mill. IDR)	NPV (Mill. IDR)	B/C
0	7,094,730	3,006,809	-4,087,922	0.42
1	6,231,622	2,505,185	-3,726,437	0.40
2	5,530,827	2,104,706	-3,426,121	0.38
3	4,956,739	1,782,619	-3,174,120	0.36
4	4,482,253	1,521,683	-2,960,570	0.34
5	4,086,617	1,308,758	-2,777,860	0.32
6	3,753,848	1,133,770	-2,620,078	0.30
7	3,471,561	988,955	-2,482,606	0.28
8	3,230,104	868,289	-2,361,815	0.27
9	3,021,908	767,074	-2,254,834	0.25
10	2,841,005	681,626	-2,159,379	0.24
11	2,682,653	609,035	-2,073,619	0.23
12	2,543,072	546,994	-1,996,078	0.22
13	2,419,220	493,661	-1,925,559	0.20
14	2,308,642	447,558	-1,861,084	0.19
15	2,209,341	407,492	-1,801,849	0.18
16	2,119,681	372,494	-1,747,187	0.18
17	2,038,318	341,775	-1,696,543	0.17
18	1,964,140	314,688	-1,649,452	0.16
19	1,896,218	290,696	-1,605,522	0.15
20	1,833,776	269,358	-1,564,418	0.15

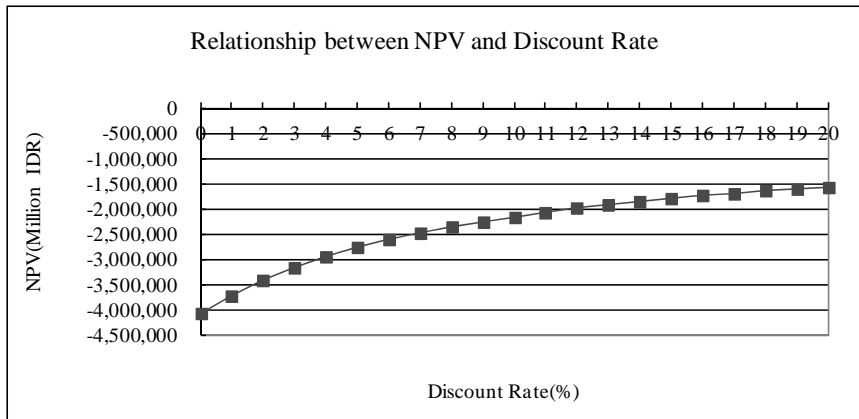
DR: Discount Rate(%)

CM COST: Cumulative Cost

CM BNFT: Cumulative Benefit

NPV: Net Present Value

B/C: Benefit Cost Ratio



**Calculation results on Financial Analysis**

<b>NPV</b>	<b>-3,677,844</b>
<b>B/C</b>	<b>0.40</b>
<b>FIRR</b>	<b>No solution</b>

\*Project Discount rate= 1.15%

**Table S/R-E3-8 Results of Financial Analysis (Zone 6/Case 2) (1/2)**

**Calculation for NPV, B/C and FIRR on Financial Analysis**

Zone 6/Case 2

Unit : Million IDR

Year	Future Value					Present Value			
	Cost			Benefit	Benefit-Cost (Cash Flow)	Discount Rate=1.15%			
	Cnstruction Cost	O&M Cost	Total			Cost	Benefit	NPV	
1	2013	384,314	0	384,314	0	-384,314	384,314	0	-384,314
2	2014	191,222	15,354	206,575	10,558	-196,017	204,227	10,438	-193,789
3	2015	406,763	30,707	437,470	21,173	-416,297	427,579	20,694	-406,885
4	2016	243,029	46,061	289,090	41,398	-247,691	279,341	40,002	-239,339
5	2017	406,763	61,414	468,177	55,345	-412,832	447,246	52,871	-394,375
6	2018	191,222	76,768	267,990	69,366	-198,624	253,098	65,511	-187,587
7	2019	406,763	92,121	498,884	108,499	-390,385	465,805	101,305	-364,500
8	2020	191,222	107,475	298,697	126,917	-171,779	275,721	117,155	-158,566
9	2021	22,449	122,828	145,277	145,432	155	132,577	132,719	142
10	2022	22,449	138,182	160,630	213,256	52,626	144,922	192,401	47,479
11	2023	22,449	153,535	175,984	237,575	61,591	156,969	211,905	54,936
12	2024	0	153,535	153,535	238,198	84,663	135,389	210,046	74,657
13	2025	0	153,535	153,535	310,469	156,933	133,850	270,662	136,812
14	2026	18,279	153,535	171,815	311,279	139,465	148,082	268,283	120,201
15	2027	0	153,535	153,535	312,090	158,555	130,823	265,924	135,101
16	2028	0	153,535	153,535	312,901	159,366	129,336	263,584	134,247
17	2029	0	153,535	153,535	313,712	160,176	127,866	261,262	133,396
18	2030	0	153,535	153,535	314,522	160,987	126,412	258,959	132,547
19	2031	0	153,535	153,535	314,522	160,987	124,975	256,015	131,040
20	2032	0	153,535	153,535	314,522	160,987	123,554	253,104	129,550
21	2033	0	153,535	153,535	314,522	160,987	122,149	250,227	128,078
22	2034	0	153,535	153,535	314,522	160,987	120,760	247,382	126,621
23	2035	0	153,535	153,535	314,522	160,987	119,387	244,569	125,182
24	2036	365,588	153,535	519,123	314,522	-204,601	399,076	241,789	-157,287
25	2037	0	153,535	153,535	314,522	160,987	116,688	239,040	122,352
26	2038	0	153,535	153,535	314,522	160,987	115,362	236,322	120,960
27	2039	0	153,535	153,535	314,522	160,987	114,050	233,635	119,585
28	2040	0	153,535	153,535	314,522	160,987	112,753	230,979	118,226
29	2041	0	153,535	153,535	314,522	160,987	111,471	228,353	116,882
30	2042	0	153,535	153,535	314,522	160,987	110,204	225,757	115,553
31	2043	0	153,535	153,535	314,522	160,987	108,951	223,190	114,239
32	2044	0	153,535	153,535	314,522	160,987	107,712	220,652	112,940
33	2045	0	153,535	153,535	314,522	160,987	106,488	218,144	111,656
Total		2,872,510	4,222,220	7,094,730	7,860,524	765,794	6,117,138	6,292,879	<b>175,741</b>

<b>FIRR=</b>	<b>1.57%</b>	<b>B/C=</b>	<b>1.03</b>
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**Table S/R-E3-8 Results of Financial Analysis (Zone 6/Case 2) (2/2)**

**Relationship between NPV and Discount Rate on Financial Analysis**

Zone 6/Case 2

DR (%)	CM COST (Mill. IDR)	CM BNFT (Mill. IDR)	NPV (Mill. IDR)	B/C
0	7,094,730	7,860,524	765,794	1.11
1	6,231,622	6,474,425	242,803	1.04
2	5,530,827	5,373,329	-157,498	0.97
3	4,956,739	4,492,629	-464,110	0.91
4	4,482,253	3,783,419	-698,834	0.84
5	4,086,617	3,208,470	-878,147	0.79
6	3,753,848	2,739,284	-1,014,564	0.73
7	3,471,561	2,353,918	-1,117,643	0.68
8	3,230,104	2,035,385	-1,194,718	0.63
9	3,021,908	1,770,462	-1,251,446	0.59
10	2,841,005	1,548,794	-1,292,210	0.55
11	2,682,653	1,362,231	-1,320,422	0.51
12	2,543,072	1,204,323	-1,338,749	0.47
13	2,419,220	1,069,933	-1,349,287	0.44
14	2,308,642	954,955	-1,353,687	0.41
15	2,209,341	856,084	-1,353,256	0.39
16	2,119,681	770,648	-1,349,033	0.36
17	2,038,318	696,475	-1,341,843	0.34
18	1,964,140	631,792	-1,332,348	0.32
19	1,896,218	575,141	-1,321,077	0.30
20	1,833,776	525,322	-1,308,454	0.29

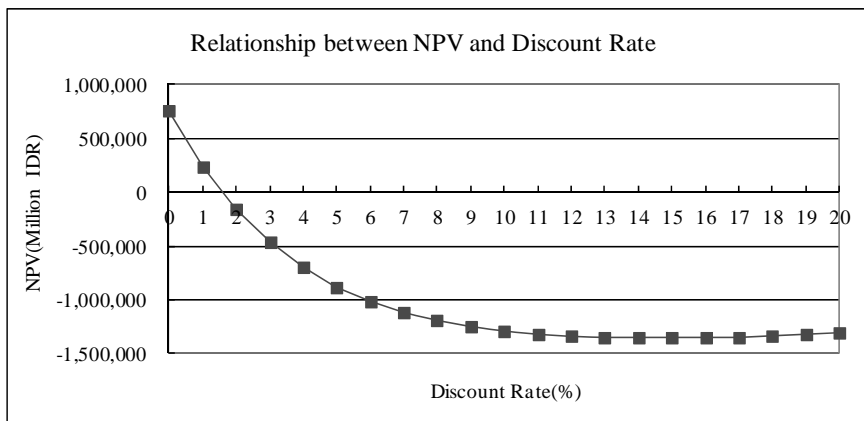
DR: Discount Rate(%)

CM COST: Cumulative Cost

CM BNFT: Cumulative Benefit

NPV: Net Present Value

B/C: Benefit Cost Ratio



**Calculation results on Financial Analysis**

NPV	175,741
B/C	1.03
FIRR	1.57%

\*Project Discount rate= 1.15%

**Table S/R-E3-9 Results of Financial Analysis (Zone 1 and Zone 6/Case 1) (1/2)**

**Calculation for NPV, B/C and FIRR on Financial Analysis**

Zone 1 and Zone 6/Case 1

Unit: Million IDR

Year	Future Value						Present Value		
	Cost			Benefit	Benefit-Cost (Cash Flow)	Discount Rate=1.15%			
	Construction Cost	O&M Cost	Total			Cost	Benefit	NPV	
1	2013	757,328	0	757,328	0	-757,328	757,328	0	-757,328
2	2014	339,574	27,848	367,422	25,755	-341,666	363,244	25,462	-337,782
3	2015	797,254	55,696	852,950	51,601	-801,349	833,665	50,434	-783,231
4	2016	391,381	83,544	474,925	77,536	-397,389	458,910	74,921	-383,988
5	2017	797,254	111,392	908,646	103,562	-805,084	868,023	98,932	-769,091
6	2018	339,574	139,240	478,814	129,677	-349,136	452,207	122,471	-329,736
7	2019	555,114	167,088	722,203	155,883	-566,319	674,316	145,547	-528,769
8	2020	208,699	194,936	403,635	182,179	-221,456	372,587	168,166	-204,421
9	2021	39,925	222,784	262,710	208,565	-54,144	239,745	190,333	-49,411
10	2022	39,925	250,632	290,558	235,042	-55,516	262,144	212,057	-50,087
11	2023	39,925	278,480	318,406	261,608	-56,798	284,003	233,342	-50,661
12	2024	0	278,480	278,480	262,059	-16,422	245,567	231,086	-14,481
13	2025	14,528	278,480	293,009	262,509	-30,500	255,441	228,852	-26,589
14	2026	18,279	278,480	296,760	262,960	-33,800	255,769	226,638	-29,131
15	2027	0	278,480	278,480	263,411	-15,070	237,286	224,445	-12,841
16	2028	0	278,480	278,480	263,861	-14,619	234,588	222,273	-12,315
17	2029	0	278,480	278,480	264,312	-14,169	231,921	220,122	-11,800
18	2030	0	278,480	278,480	264,763	-13,718	229,284	217,990	-11,295
19	2031	0	278,480	278,480	264,763	-13,718	226,678	215,512	-11,166
20	2032	0	278,480	278,480	264,763	-13,718	224,101	213,061	-11,039
21	2033	0	278,480	278,480	264,763	-13,718	221,553	210,639	-10,914
22	2034	0	278,480	278,480	264,763	-13,718	219,034	208,244	-10,790
23	2035	290,567	278,480	569,048	264,763	-304,285	442,486	205,877	-236,609
24	2036	365,588	278,480	644,068	264,763	-379,306	495,127	203,536	-291,591
25	2037	0	278,480	278,480	264,763	-13,718	211,648	201,222	-10,426
26	2038	0	278,480	278,480	264,763	-13,718	209,241	198,934	-10,307
27	2039	0	278,480	278,480	264,763	-13,718	206,862	196,672	-10,190
28	2040	0	278,480	278,480	264,763	-13,718	204,511	194,436	-10,074
29	2041	0	278,480	278,480	264,763	-13,718	202,185	192,226	-9,960
30	2042	0	278,480	278,480	264,763	-13,718	199,887	190,040	-9,846
31	2043	0	278,480	278,480	264,763	-13,718	197,614	187,880	-9,734
32	2044	0	278,480	278,480	264,763	-13,718	195,367	185,744	-9,624
33	2045	72,642	278,480	351,122	264,763	-86,360	243,529	183,632	-59,897
Total		5,067,558	7,658,213	12,725,770	7,246,721	-5,479,049	10,955,851	5,880,727	<b>-5,075,124</b>

<b>FIRR= No solution</b>	<b>B/C= 0.54</b>
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**Table S/R-E3-9 Results of Financial Analysis (Zone 1 and Zone 6/Case 1) (2/2)**

**Relationship between NPV and Discount Rate on Financial Analysis**

Zone 1 and Zone 6/Case 1

DR (%)	CM COST (Mill. IDR)	CM BNFT (Mill. IDR)	NPV (Mill. IDR)	B/C
0	12,725,770	7,246,721	-5,479,049	0.57
1	11,162,836	6,039,336	-5,123,500	0.54
2	9,897,186	5,075,264	-4,821,922	0.51
3	8,863,141	4,299,786	-4,563,356	0.49
4	8,010,795	3,671,434	-4,339,360	0.46
5	7,301,996	3,158,607	-4,143,389	0.43
6	6,707,411	2,737,076	-3,970,335	0.41
7	6,204,349	2,388,160	-3,816,189	0.38
8	5,775,151	2,097,371	-3,677,780	0.36
9	5,405,996	1,853,408	-3,552,588	0.34
10	5,085,995	1,647,403	-3,438,592	0.32
11	4,806,523	1,472,359	-3,334,164	0.31
12	4,560,703	1,322,722	-3,237,981	0.29
13	4,343,021	1,194,061	-3,148,960	0.27
14	4,149,026	1,082,817	-3,066,210	0.26
15	3,975,108	986,118	-2,988,990	0.25
16	3,818,316	901,634	-2,916,682	0.24
17	3,676,227	827,462	-2,848,765	0.23
18	3,546,840	762,044	-2,784,796	0.21
19	3,428,491	704,091	-2,724,399	0.21
20	3,319,787	652,539	-2,667,248	0.20

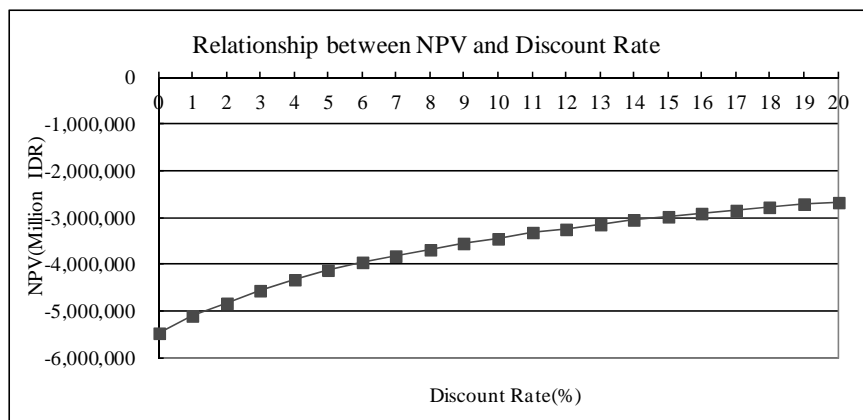
DR: Discount Rate(%)

CM COST: Cumulative Cost

CM BNFT: Cumulative Benefit

NPV: Net Present Value

B/C: Benefit Cost Ratio



**Calculation results on Financial Analysis**

<b>NPV</b>	<b>-5,075,124</b>
<b>B/C</b>	<b>0.54</b>
<b>FIRR</b>	<b>No solution</b>

\*Project Discount rate= 1.15%

**Table S/R-E3-10 Results of Financial Analysis (Zone 1 and Zone 6/Case 2) (1/2)**

**Calculation for NPV, B/C and FIRR on Financial Analysis**

Zone 1 and Zone 6/Case 2

Unit : Million IDR

Year	Future Value					Present Value			
	Cost			Benefit	Benefit-Cost (Cash Flow)	Discount Rate=1.15%			
	Cnstruction Cost	O&M Cost	Total			Cost	Benefit	NPV	
1	2013	757,328	0	757,328	0	-757,328	757,328	0	-757,328
2	2014	339,574	27,848	367,422	25,755	-341,666	363,244	25,462	-337,782
3	2015	797,254	55,696	852,950	51,601	-801,349	833,665	50,434	-783,231
4	2016	391,381	83,544	474,925	100,797	-374,128	458,910	97,398	-361,512
5	2017	797,254	111,392	908,646	134,630	-774,016	868,023	128,611	-739,412
6	2018	339,574	139,240	478,814	168,581	-310,233	452,207	159,213	-292,994
7	2019	555,114	167,088	722,203	263,443	-458,760	674,316	245,975	-428,342
8	2020	208,699	194,936	403,635	307,883	-95,752	372,587	284,200	-88,387
9	2021	39,925	222,784	262,710	352,475	89,766	239,745	321,664	81,919
10	2022	39,925	250,632	290,558	516,386	225,829	262,144	465,888	203,744
11	2023	39,925	278,480	318,406	574,753	256,347	284,003	512,652	228,649
12	2024	0	278,480	278,480	575,743	297,262	245,567	507,696	262,129
13	2025	14,528	278,480	293,009	749,753	456,744	255,441	653,623	398,183
14	2026	18,279	278,480	296,760	751,040	454,280	255,769	647,301	391,532
15	2027	0	278,480	278,480	752,327	473,847	237,286	641,039	403,753
16	2028	0	278,480	278,480	753,614	475,134	234,588	634,835	400,246
17	2029	0	278,480	278,480	754,901	476,421	231,921	628,689	396,768
18	2030	0	278,480	278,480	756,188	477,708	229,284	622,601	393,317
19	2031	0	278,480	278,480	756,188	477,708	226,678	615,523	388,845
20	2032	0	278,480	278,480	756,188	477,708	224,101	608,525	384,424
21	2033	0	278,480	278,480	756,188	477,708	221,553	601,606	380,053
22	2034	0	278,480	278,480	756,188	477,708	219,034	594,766	375,733
23	2035	290,567	278,480	569,048	756,188	187,141	442,486	588,004	145,519
24	2036	365,588	278,480	644,068	756,188	112,120	495,127	581,319	86,192
25	2037	0	278,480	278,480	756,188	477,708	211,648	574,710	363,062
26	2038	0	278,480	278,480	756,188	477,708	209,241	568,176	358,935
27	2039	0	278,480	278,480	756,188	477,708	206,862	561,716	354,854
28	2040	0	278,480	278,480	756,188	477,708	204,511	555,330	350,819
29	2041	0	278,480	278,480	756,188	477,708	202,185	549,016	346,831
30	2042	0	278,480	278,480	756,188	477,708	199,887	542,774	342,888
31	2043	0	278,480	278,480	756,188	477,708	197,614	536,603	338,989
32	2044	0	278,480	278,480	756,188	477,708	195,367	530,503	335,135
33	2045	72,642	278,480	351,122	756,188	405,066	243,529	524,471	280,943
Total		5,067,558	7,658,213	12,725,770	18,932,696	6,206,925	10,955,851	15,160,324	<b>4,204,473</b>

<b>FIRR=</b>	<b>5.79%</b>	<b>B/C=</b>	<b>1.38</b>
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**Table S/R-E3-10 Results of Financial Analysis (Zone 1 and Zone 6/Case 2) (2/2)**

**Relationship between NPV and Discount Rate on Financial Analysis**

Zone 1 and Zone 6/Case 2

DR (%)	CM COST (Mill. IDR)	CM BNFT (Mill. IDR)	NPV (Mill. IDR)	B/C
0	12,725,770	18,932,696	6,206,925	1.49
1	11,162,836	15,597,218	4,434,383	1.40
2	9,897,186	12,947,276	3,050,091	1.31
3	8,863,141	10,827,497	1,964,355	1.22
4	8,010,795	9,120,266	1,109,471	1.14
5	7,301,996	7,736,048	434,052	1.06
6	6,707,411	6,606,297	-101,114	0.98
7	6,204,349	5,678,240	-526,109	0.92
8	5,775,151	4,911,016	-864,135	0.85
9	5,405,996	4,272,813	-1,133,183	0.79
10	5,085,995	3,738,725	-1,347,270	0.74
11	4,806,523	3,289,143	-1,517,380	0.68
12	4,560,703	2,908,545	-1,652,158	0.64
13	4,343,021	2,584,578	-1,758,443	0.60
14	4,149,026	2,307,356	-1,841,671	0.56
15	3,975,108	2,068,926	-1,906,182	0.52
16	3,818,316	1,862,857	-1,955,458	0.49
17	3,676,227	1,683,923	-1,992,305	0.46
18	3,546,840	1,527,852	-2,018,989	0.43
19	3,428,491	1,391,138	-2,037,353	0.41
20	3,319,787	1,270,889	-2,048,898	0.38

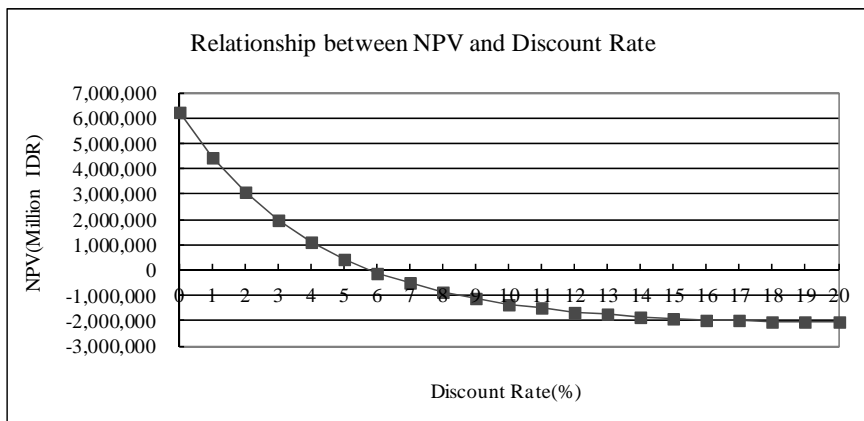
DR: Discount Rate(%)

CM COST: Cumulative Cost

CM BNFT: Cumulative Benefit

NPV: Net Present Value

B/C: Benefit Cost Ratio



**Calculation results on Financial Analysis**

NPV	<b>4,204,473</b>
B/C	<b>1.38</b>
FIRR	<b>5.79%</b>

\*Project Discount rate= 1.15%



**Table S/R-E3-11 Allocation of Construction Cost of On-site Priority Project (2013-2045)**

Unit : Million IDR

Items	Construction of a new STP in South area	Rehabilitation and Extension of Pulo Gebang STP	Duri Kosambi WWTP integrated with existing On-site STP	Total	Central Gov.	DKI Jakarta	
					(1) Subsidy from Central Gov.	(2) Foreign currency loan	(3) Budget of DKI Jakarta (APBD)
Construction Cost				100%	50%	35%	15%
A. Direct Construction Cost	45,129	17,646	170,766	233,541	116,771	81,740	35,031
(1) Civil and Building works	15,851	6,682	56,173	78,706	39,353	27,547	11,806
(2) Mechanical facilities	14,309	10,750	44,939	69,998	34,999	24,499	10,500
(3) Electrical facilities	300	214	11,235	11,749	5,874	4,112	1,762
(4) Facilities Replacement (from 2013 to 2045)	14,669	0	58,420	73,089	36,544	25,581	10,963
B. Indirect Construction Cost	5,867	2,294	22,200	30,360	15,180	10,626	4,554
C. Engineering Cost	3,159	1,235	11,954	16,348	8,174	5,722	2,452
D. Physical Contingency	2,550	997	9,648	13,195	6,598	4,618	1,979
E. Land Use Cost	0	0	0	0	0	0	0
F. Value Added Tax	5,670	2,217	21,457	29,344	14,672	10,271	4,402
<b>Construction Cost Total (including VAT)</b>	<b>62,375</b>	<b>24,390</b>	<b>236,025</b>	<b>322,789</b>	<b>161,395</b>	<b>112,976</b>	<b>48,418</b>

### E3.1 Pro Forma Calculation of Sewerage System Usage Fee Unit Price per Unit Wastewater Volume

Number of customers by type, construction floor area and sewerage system usage fee income from the results of sewerage project currently being implemented by PD PAL JAYA are as given in the following table.

**Table S/R-E3-12 No. of PD PAL JAYA Customers, Construction Floor Area and Sewerage System Usage Fee Income (2009)**

Category of customer		Customer		Floor area		Tariff Income per year	
		Number	Rate	Area (m <sup>2</sup> )	Rate	(Million IDR)	Rate
Household		1,179	86.3%	130,216	2.8%	152	0.5%
Non-household	Small commercial	12	0.9%	62,328	1.3%	116	0.4%
	Large commercial	143	10.5%	4,201,569	90.8%	27,951	97.5%
	Social	31	2.3%	231,707	5.0%	454	1.6%
	Industry	1	0.1%	400	0.0%	2	0.0%
Total		1,366	100%	4,626,220	100%	28,675	100%

The following table gives the results of pro forma calculation of average sewerage system usage fee per floor area for each type of customer.

**Table S/R-E3-13 Sewerage System Usage Fee Unit Price per Floor Area (Pro Forma Calculation)**

Category of customer		Unit Tariff			
		(IDR/m <sup>2</sup> /year)		(IDR/m <sup>2</sup> /month)	
Household		1,167		97	
Non-household	Small commercial	1,861	6,344	155	529
	Large commercial	6,652		554	
	Social	1,959		163	
	Industry	5,000		417	
Total		6,198		517	

The volume of wastewater flow to the Setiabudi wastewater treatment plant is an average of 18,032 m<sup>3</sup> per day (in 2009, hearing from PD PAL JAYA).

The amount of wastewater flow volume accounted for by "household" in the case where a household consists of 5 people and the household wastewater volume basic unit is 150 LCD would be 1,179 households multiplied by 5 people per household times 150 LCD equals 884 m<sup>3</sup> per day. Table E3-14 gives the estimated values of the wastewater volume breakdown for household and non-household.

**Table S/R-E3-14 Estimate of Wastewater Volume Breakdown**

Category of customer	Waste water flow (daily average)	
	Amount (m <sup>3</sup> /day)	Rate (%)
Household	884	5%
Non-household	17,148	95%
Total	18,032	100%

From this, pro forma calculation of sewerage system usage fee unit price per unit wastewater volume for household and non-household is as given in Table E3-15.

**Table E3-15 Performa Calculation of Sewerage System Usage Fee Unit Price per Unit Wastewater Volume**

Category of customer	Calculation	Unit tariff (IDR/m <sup>3</sup> )
Household	152 Million IDR/year / 884 m <sup>3</sup> /day /365 day	471
Non-household	28,523 Million IDR/year / 17,148 m <sup>3</sup> /day /365 day	4,557

### E3.6 Calculation of Benefit

### E3.6.2 The Increase of the Sewerage Tariff

**Table S/R-E3-16 Revision History of Sewerage Tariff (1/2)**

PD PAL JAYA tariff per building M2 per month

Unit : IDR/m<sup>2</sup>/month

NO	Customer Category	1994 <sup>1)</sup>	2003 <sup>2)</sup>		2006 <sup>3)</sup>	
		Tariff	Tariff	% Increase	Tariff	% Increase
<b>I</b>	<b>HOUSEHOLD</b>					
1	Household Type A	28	72	157%	90	25%
2	Household Type B	40	90	125%	113	26%
3	Household Type C	76	108	42%	135	25%
4	Household Type D	114	126	11%	158	25%
<b>II</b>	<b>SMALL COMMERCE</b>					
1	Store	78	108	38%	135	25%
2	Office (Up to three stories building)	78	108	38%	135	25%
3	Building Material Store	78	-	-	-	-
4	Beauty Shop/Hairdresser	85	126	48%	158	25%
5	Catering	107	144	35%	180	25%
6	Small Restaurant	114	180	58%	225	25%
7	Inn	114	180	58%	225	25%
8	Others Small Commerce	114	180	58%	225	25%
<b>III</b>	<b>BIG COMMERCE</b>					
1	High Rise Building Office	224	360	61%	450	25%
2	High Rise Building Office (Including Restaurant and/or Fitness)	245	396	62%	495	25%
3	Shopping Center/Mall/Supermarket/Show Room	-	396	-	495	25%
4	Hotel I, II, III Stars	245	396	62%	495	25%
5	Apartment/Condominium	305	540	77%	675	25%
6	IV Stars Hotel	305	540	77%	675	25%
7	Places of Entertainment/Big Restaurant/Café	330	576	75%	720	25%
8	Private Hospital	330	576	75%	720	25%
9	V Stars Hotel	330	576	75%	720	25%
10	Others Big Commerce	-	576	-	720	25%
<b>IV</b>	<b>SOCIAL</b>					
1	Place of Worship	40	40	0%	50	25%
2	School	60	108	80%	180	67%
3	Government Institution	76	144	89%	180	25%
4	Public Health Center ( <i>Puskesmas</i> )	85	85	0%	135	59%
5	Swimming Pool owned by Government	60	-	-	-	-
6	Other Institution	76	144	89%	180	25%
7	School Including Dormitory	60	144	140%	180	25%
8	Swimming Pool owned by Private	78	-	-	-	-
9	Government's clinic	103	-	-	-	-
10	Government's Hospital	153	216	41%	270	25%
11	Clinic	108	216	100%	270	25%
12	Swimming Pool	-	180	-	225	25%
<b>V</b>	<b>INDUSTRY</b>					
1	Household Industry	82	-	-	-	-
2	Pharmacy Industry	83	-	-	-	-
3	Ice Factory	268	-	-	-	-
4	Drinks Factory	296	-	-	-	-
5	Textiles/Batik Factory	296	-	-	-	-
6	Fishery Industry	296	-	-	-	-
7	Small Industry	-	144	-	180	25%
8	Medium Industry	-	432	-	540	25%
9	Big Industry	-	468	-	585	25%

REMARKS:

<sup>1)</sup>Based on Governor's Decree of DKI Jakarta No 211 Year 1994

<sup>2)</sup>Based on Governor's Decree of DKI Jakarta No 2379 Year 2003

<sup>3)</sup>Based on Governor's Decree of DKI Jakarta No 1470 Year 2006

☐ : This Category Removed after 2003

☐ : Added after 2003

**Table S/R-E3-16 Revision History of Sewerage Tariff (2/2)**

PD PAL JAYA Connection Tariff

NO	Customer Category	1994 <sup>1)</sup>	2003 <sup>2)</sup>		2006 <sup>3)</sup>		
		Tariff	Tariff	% Increase	A Category*		B Category*
		Rp/Unit	Rp/Unit		Rp/Unit	% Increase	Tariff
<b>I</b>	<b>HOUSEHOLD</b>						
1	Household Type A	10,000	10,000	0%	10,000	0%	
2	Household Type B	10,000	10,000	0%	10,000	0%	
3	Household Type C	10,000	10,000	0%	10,000	0%	
4	Household Type D	110,000	110,000	0%	110,000	0%	
		Rp/m2	Rp/m2		Rp/m2		
<b>II</b>	<b>SMALL COMMERCE</b>						
1	Store	1,000	1,000	0%	1,000	0%	
2	Office (Up to three stories building)	1,000	1,000	0%	1,000	0%	
3	Building Material Store	1,000	-	-	-	-	
4	Beauty Shop/Hairdresser	1,000	1,000	0%	1,000	0%	
5	Catering	1,400	1,400	0%	1,400	0%	
6	Small Restaurant	1,500	1,500	0%	1,500	0%	
7	Inn	1,500	1,500	0%	1,500	0%	
8	Others Small Commerce	1,500	1,500	0%	1,500	0%	
<b>III</b>	<b>BIG COMMERCE</b>						
1	High Rise Building Office	3,500	1,750	-50%	1,750	0%	3,500
2	High Rise Building Office (Including Restaurant and/or Fitness)	3,850	1,925	-50%	1,925	0%	3,850
3	Shopping Center/Mall/Supermarket/Show Room	-	1,925	-	1,925	0%	3,850
4	Hotel I, II, III Stars	3,850	1,925	-50%	1,925	0%	3,850
5	Apartment/Condominium	5,250	2,625	-50%	2,625	0%	5,250
6	IV Stars Hotel	5,250	2,625	-50%	2,625	0%	5,250
7	Places of Entertainment/Big Restaurant/Café	5,600	2,800	-50%	2,800	0%	5,600
8	Private Hospital	5,600	2,800	-50%	2,800	0%	5,600
9	V Stars Hotel	5,600	2,800	-50%	2,800	0%	5,600
10	Others Big Commerce	-	2,800	-	2,800	0%	5,600
<b>IV</b>	<b>SOCIAL</b>						
1	Place of Worship	550	550	0%	550	0%	
2	School	850	850	0%	1,100	29%	
3	Government Institution	1,100	1,100	0%	1,100	0%	
4	Public Health Center ( <i>Puskemas</i> )	1,100	1,100	0%	850	-23%	
5	Swimming Pool owned by Government	1,100	-	-	-	-	
6	Other Institution	1,100	1,100	0%	1,100	0%	
7	School Including Dormitory	1,100	1,100	0%	1,100	0%	
8	Swimming Pool owned by Private	1,100	-	-	-	-	
9	Government's clinic	1,500	-	-	-	-	
10	Government's Hospital	1,500	1,500	0%	1,500	0%	
11	Clinic	1,500	1,500	0%	1,500	0%	
12	Swimming Pool	-	1,100	-	1,100	0%	
<b>V</b>	<b>INDUSTRY</b>						
1	Household Industry	1,000	-	-	-	-	
2	Pharmacy Industry	1,000	-	-	-	-	
3	Ice Factory	4,200	-	-	-	-	
4	Drinks Factory	4,200	-	-	-	-	
5	Textiles/Batik Factory	4,300	-	-	-	-	
6	Fishery Industry	4,300	-	-	-	-	
7	Small Industry	-	1,000	-	1,000	0%	
8	Medium Industry	-	4,200	-	4,200	0%	
9	Big Industry	-	4,300	-	4,300	0%	

REMARKS:

<sup>1)</sup>Based on Governor's Decree of DKI Jakarta No 211 Year 1994

<sup>2)</sup>Based on Governor's Decree of DKI Jakarta No 2379 Year 2003

<sup>3)</sup>Based on Governor's Decree of DKI Jakarta No 1470 Year 2006

■ : This Category Removed after 2003

■ : Added after 2003

\* In Tariff in 2006, the category for installing the pipe connection is divided into 2 category:

A Category: The Price for connecting the Pipe to Inspection Chamber for customer that already have installed on-site system/TTP

B Category: The Price for connecting the Pipe to Inspection Chamber for customer that have not installed on-site system/TTP

## E3.7 Financial Analysis Results

### E3.7.3 Financial Evaluation (Summary)

**Table S/R-E3-17 Revision History of Water Supply Tariff by PAM JAYA (1/3)**

Group	IDR/m <sup>3</sup>			Tariff Average IDR/m <sup>3</sup>	Household tariff average* IDR/m <sup>3</sup>	Validity Period	Legal Basis
	0-10 m <sup>3</sup>	11-20 m <sup>3</sup>	>20 m <sup>3</sup>				
Group I	375	375	375	1,964	1,188	Year 1998 - 2001	Governor's Decree No 5215/1998 Date: 24 July 1998
Group II	375	375	850				
Group III A	995	995	1,275				
Group III B	995	995	1,600				
Group IV A	1,660	1,660	2,475				
Group IV B	3,650	3,650	3,650				
Special Group	5,200	5,200	5,200				
Group I	375	375	375	2,562	1,582	Year 2001-2003	Governor's Decree No 1923/2001 Date: 29 March 2001
Group II	375	375	850				
Group III A	1035	1330	1560				
Group III B	1335	1520	2100				
Group IV A	2500	2500	3500				
Group IV B	5200	5200	5200				
Special Group	7000	7000	7000				
Group I	375	375	375	3,396	2,446	Year 2003	Governor's Decree No 985/2003 Date: 4 April 2003
Group II	375	375	850				
Group III A	1700	2200	2500				
Group III B	2200	2600	3300				
Group IV A	3850	4200	5200				
Group IV B	6600	6700	7000				
Special Group	8800	8800	8800				
Group I	500	500	500	4,781	3,346	Year 2004	Governor's Decree No 4164/2003 Date: 31 December 2003
Group II	500	500	900				
Group III A	2250	3000	3500				
Group III B	3250	4000	5000				
Group IV A	4750	5750	6750				
Group IV B	9100	9100	9100				
Special Group	11000	11000	11000				
Group I	550	550	550	5,343	3,692	Semester I/2005	Governor's Decree No 138/2005
Group II	650	550	1,000				
Group III A	2,450	3,350	4,000				
Group III B	3,500	4,400	5,600				
Group IV A	5,100	6,200	7,500				
Group IV B	9,750	9,750	9,750				
Special Group	11,500	11,500	11,500				
Group I	900	900	900	5,889	4,213	Semester II/2005	Governor's Decree No 1401/2005 Date: 20 July 2005
Group II	900	900	1,350				
Group III A	3,000	3,900	4,550				
Group III B	4,100	5,000	6,200				
Group IV A	5,700	6,800	8,150				
Group IV B	10,400	10,400	10,400				
Special Group	12,150	12,150	12,150				
Group I	950	950	950	6,384	4,585	Semester I/2006	Governor's Regulation No 17/2006 Date: 13 February 2006
Group II	950	950	1,425				
Group III A	3,260	4,280	4,990				
Group III B	4,465	5,475	6,775				
Group IV A	6,200	7,400	8,850				
Group IV B	11,325	11,325	11,325				
Special Group	13,200	13,200	13,200				
Group I	950	950	950	6,384	4,585	Semester II/2006	Governor's Regulation No 84/2006 Date: 31 August 2006
Group II	950	950	1,425				
Group III A	3,260	4,280	4,990				
Group III B	4,465	5,475	6,775				
Group IV A	6,200	7,400	8,850				
Group IV B	11,325	11,325	11,325				
Special Group	13,200	13,200	13,200				
Group I	1,050	1,050	1,050	7,025	5,002	2007 - Based on the website of PDAM <a href="http://www.pamijaya.co.id/Informasi-Tarif.html">http://www.pamijaya.co.id/Informasi-Tarif.html</a> This tariff still apply	Governor's Regulation No 11/2007 Date: 15 January 2007
Group II	1,050	1,050	1,050				
Group III A	3,550	4,700	5,500				
Group III B	4,900	6,000	7,450				
Group IV A	6,825	8,150	9,800				
Group IV B	12,550	12,550	12,550				
Special Group	14,650	14,650	14,650				

Source: [http://www.jakartawater.org/images/stories/unduh/tarif\\_air.pdf](http://www.jakartawater.org/images/stories/unduh/tarif_air.pdf)

\* JICA expert team calculated the average of Group II, Group III A, Group III B and Group IV as household average tariff.

**Table S/R-E3-17 Revision History of Water Supply Tariff by PAM JAYA (2/3)**

Increment rate							
Group	IDR/m <sup>3</sup> (% Increase)			Average increment rate %	Average increment rate of household tariff* %	Validity Period	Legal Basis
	0-10 m <sup>3</sup>	11-20 m <sup>3</sup>	>20 m <sup>3</sup>				
Group I	375	375	375	-	-	Year 1998 - 2001	Governor's Decree No 5215/1998 Date: 24 July 1998
Group II	375	375	850				
Group III A	995	995	1,275				
Group III B	995	995	1,600				
Group IV A	1,660	1,660	2,475				
Group IV B	3,650	3,650	3,650				
Special Group	5,200	5,200	5,200				
Group I	0%	0%	0%	30%	33%	Year 2001-2003	Governor's Decree No 1923/2001 Date: 29 March 2001
Group II	0%	0%	0%				
Group III A	4%	34%	22%				
Group III B	34%	53%	31%				
Group IV A	51%	51%	41%				
Group IV B	42%	42%	42%				
Special Group	35%	35%	35%				
Group I	0%	0%	0%	33%	55%	Year 2003	Governor's Decree No 985/2003 Date: 4 April 2003
Group II	0%	0%	0%				
Group III A	64%	65%	60%				
Group III B	65%	71%	57%				
Group IV A	54%	68%	49%				
Group IV B	27%	29%	35%				
Special Group	26%	26%	26%				
Group I	33%	33%	33%	41%	37%	Year 2004	Governor's Decree No 4164/2003 Date: 31 December 2003
Group II	33%	33%	6%				
Group III A	32%	36%	40%				
Group III B	48%	54%	52%				
Group IV A	23%	37%	30%				
Group IV B	38%	36%	30%				
Special Group	25%	25%	25%				
Group I	10%	10%	10%	12%	10%	Semester I/2005	Governor's Decree No 138/2005
Group II	30%	10%	11%				
Group III A	9%	12%	14%				
Group III B	8%	10%	12%				
Group IV A	7%	8%	11%				
Group IV B	7%	7%	7%				
Special Group	5%	5%	5%				
Group I	64%	64%	64%	10%	14%	Semester II/2005	Governor's Decree No 1401/2005 Date: 20 July 2005
Group II	38%	64%	35%				
Group III A	22%	16%	14%				
Group III B	17%	14%	11%				
Group IV A	12%	10%	9%				
Group IV B	7%	7%	7%				
Special Group	6%	6%	6%				
Group I	6%	6%	6%	8%	9%	Semester I/2006	Governor's Regulation No 17/2006 Date: 13 February 2006
Group II	6%	6%	6%				
Group III A	9%	10%	10%				
Group III B	9%	10%	9%				
Group IV A	9%	9%	9%				
Group IV B	9%	9%	9%				
Special Group	9%	9%	9%				
Group I	0%	0%	0%	0%	0%	Semester II/2006	Governor's Regulation No 84/2006 Date: 31 August 2006
Group II	0%	0%	0%				
Group III A	0%	0%	0%				
Group III B	0%	0%	0%				
Group IV A	0%	0%	0%				
Group IV B	0%	0%	0%				
Special Group	0%	0%	0%				
Group I	11%	11%	11%	10%	9%	2007 - Based on the website of PDAM <a href="http://www.pamjaya.co.id/Informasi-Tarif.html">http://www.pamjaya.co.id/Informasi-Tarif.html</a> This tariff still apply	Governor's Regulation No 11/2007 Date: 15 January 2007
Group II	11%	11%	-26%				
Group III A	9%	10%	10%				
Group III B	10%	10%	10%				
Group IV A	10%	10%	11%				
Group IV B	11%	11%	11%				
Special Group	11%	11%	11%				

Source: [http://www.jakartawater.org/images/stories/unduh/tarif\\_air.pdf](http://www.jakartawater.org/images/stories/unduh/tarif_air.pdf)

\* JICA expert team calculated the average of Group II, Group III A, Group III B and Group IV as household average tariff.

**Table S/R-E3-17 Revision History of Water Supply Tariff by PAM JAYA (3/3)**

**Remarks (Based on Governor's Regulation No 11 Year 2007):**

**Group I**

Place for Worship  
Fire Hydrant and Public Water tap  
Dormitory of Social Board/Institution  
Orphanage  
and others similar

**Group III A**

Simple Household  
Simple Low-Cost Apartment  
Water Station  
and others similar

**Group IV A**

Above Medium Household  
Embassy/Consulate  
Government Institution Office  
Foreign Representative Office  
Commercial Private Institution  
TNI (Military Institution)  
Medium Business  
Medium Business in household  
Barbershop/Hairdresser  
Tailor  
Restaurant  
Private Hospital/Polyclinic/Laboratorium  
Doctor's Practice  
Lawyer Office  
Non-star hotel  
Small Industry  
Above Medium low cost apartment  
Medium workshop  
and others similar

**PART-F      EVALUATION BY ENVIRONMENTAL  
SOCIAL CONSIDERATION**



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SP/R : Supporting Report

M/R : Main Report

## PART-F EVALUATION BY ENVIRONMENTAL SOCIAL CONSIDERATION

### F1 Outline of Socio-Economic Survey

#### F1.1 Purpose

To implement an interview survey with a questionnaire sheet in order to collect necessary social and economic data for preparation of the New M/P

#### F1.2 Types of Survey

This socio-economic survey has 2 kinds of survey; one is for general public (hereinafter referred to as Survey A) and another is for enterprises (hereinafter referred to as Survey B).

#### F1.3 Target Area

The target are of Survey A is 261 Kelurahan (sub-districts) from 44 Kecamatan (districts) of 5 Wilayah (municipalities) as following Table S/R-F1-1. The target are of Survey B is all over DKI Jakarta.

**Table S/R-F1-1 Target Area for Survey A**

No.	Wilayah	Kecamatan	Kelurahan
1	Jakarta Barat	Grogol Petamburan	Grogol
2	Jakarta Barat	Grogol Petamburan	Jelambar
3	Jakarta Barat	Grogol Petamburan	Tanjung Duren Utara
4	Jakarta Barat	Grogol Petamburan	Tomang
5	Jakarta Barat	Grogol Petamburan	Jelambar Baru
6	Jakarta Barat	Grogol Petamburan	Wijaya Kusuma
7	Jakarta Barat	Grogol Petamburan	Tanjung Duren Selatan
8	Jakarta Barat	Taman Sari	Pinangsia
9	Jakarta Barat	Taman Sari	Glodok
10	Jakarta Barat	Taman Sari	Mangga Besar
11	Jakarta Barat	Taman Sari	Tangki
12	Jakarta Barat	Taman Sari	Keagungan
13	Jakarta Barat	Taman Sari	Krukut
14	Jakarta Barat	Taman Sari	Taman Sari
15	Jakarta Barat	Taman Sari	Maphar
16	Jakarta Barat	Tambora	Pekojan
17	Jakarta Barat	Tambora	Roa Malaka
18	Jakarta Barat	Tambora	Krendang
19	Jakarta Barat	Tambora	Tambora
20	Jakarta Barat	Tambora	Jembatan Lima
21	Jakarta Barat	Tambora	Duri Utara
22	Jakarta Barat	Tambora	Tanah Sereal
23	Jakarta Barat	Tambora	Angke
24	Jakarta Barat	Tambora	Jembatan Besi
25	Jakarta Barat	Tambora	Kali Anyar
26	Jakarta Barat	Tambora	Duri Selatan
27	Jakarta Barat	Kebon Jeruk	Kedoya Utara
28	Jakarta Barat	Kebon Jeruk	Duri Kepa
29	Jakarta Barat	Kebon Jeruk	Kebun Jeruk
30	Jakarta Barat	Kebon Jeruk	Sukabumi Utara
31	Jakarta Barat	Kebon Jeruk	Kelapa Dua
32	Jakarta Barat	Kebon Jeruk	Sukabumi Selatan
33	Jakarta Barat	Kebon Jeruk	Kedoya Selatan
34	Jakarta Barat	Palmerah	Jatipulo
35	Jakarta Barat	Palmerah	Kota Bambu Utara
36	Jakarta Barat	Palmerah	Slipi
37	Jakarta Barat	Palmerah	Palmerah
38	Jakarta Barat	Palmerah	Kemanggisan
39	Jakarta Barat	Palmerah	Kota Bambu Selatan
40	Jakarta Barat	Kembangan	Kembangan Utara
41	Jakarta Barat	Kembangan	Meruya Utara
42	Jakarta Barat	Kembangan	Meruya Selatan
43	Jakarta Barat	Kembangan	Joglo
44	Jakarta Barat	Kembangan	Srengseng

**Table S/R-F1-1 Target Area for Survey A**

No.	Wilayah	Kecamatan	Kelurahan
45	Jakarta Barat	Kembangan	Kembangan Selatan
46	Jakarta Barat	Cengkareng	Kapuk
47	Jakarta Barat	Cengkareng	Cengkareng Barat
48	Jakarta Barat	Cengkareng	Kedaung Kali Angke
49	Jakarta Barat	Cengkareng	Duri Kosambi
50	Jakarta Barat	Cengkareng	Rawa Buaya
51	Jakarta Barat	Cengkareng	Cengkareng Timur
52	Jakarta Barat	Kalideres	Semanan
53	Jakarta Barat	Kalideres	Kamal
54	Jakarta Barat	Kalideres	Tegal Alur
55	Jakarta Barat	Kalideres	Pegadungan
56	Jakarta Barat	Kalideres	Kalideres
57	Jakarta Pusat	Gambir	Cideng
58	Jakarta Pusat	Gambir	Petojo Utara
59	Jakarta Pusat	Gambir	Kebon Kelapa
60	Jakarta Pusat	Gambir	Gambir
61	Jakarta Pusat	Gambir	Petojo Selatan
62	Jakarta Pusat	Gambir	Duri Pulo
63	Jakarta Pusat	Kemayoran	Gunung Sahari Selatan
64	Jakarta Pusat	Kemayoran	Kemayoran
65	Jakarta Pusat	Kemayoran	Kebon Kosong
66	Jakarta Pusat	Kemayoran	Serdang
67	Jakarta Pusat	Kemayoran	Harapan Mulya
68	Jakarta Pusat	Kemayoran	Utah Panjang
69	Jakarta Pusat	Kemayoran	Cempaka Baru
70	Jakarta Pusat	Kemayoran	Sumur Batu
71	Jakarta Pusat	Senen	Senen
72	Jakarta Pusat	Senen	Kwitang
73	Jakarta Pusat	Senen	Kenari
74	Jakarta Pusat	Senen	Kramat
75	Jakarta Pusat	Senen	Paseban
76	Jakarta Pusat	Senen	Bungur
77	Jakarta Pusat	Cempaka Putih	Cempaka Putih Barat
78	Jakarta Pusat	Cempaka Putih	Rawasari
79	Jakarta Pusat	Cempaka Putih	Cempaka Putih Timur
80	Jakarta Pusat	Menteng	Kebon Sirih
81	Jakarta Pusat	Menteng	Gondangdia
82	Jakarta Pusat	Menteng	Cikini
83	Jakarta Pusat	Menteng	Menteng
84	Jakarta Pusat	Menteng	Pegangsaan
85	Jakarta Pusat	Tanah Abang	Kampung Bali
86	Jakarta Pusat	Tanah Abang	Kebon Kacang
87	Jakarta Pusat	Tanah Abang	Kebon Melati
88	Jakarta Pusat	Tanah Abang	Petamburan
89	Jakarta Pusat	Tanah Abang	Karet Tengsin
90	Jakarta Pusat	Tanah Abang	Bendungan Hilir
91	Jakarta Pusat	Tanah Abang	Gelora
92	Jakarta Pusat	Johar Baru	Johar Baru
93	Jakarta Pusat	Johar Baru	Kampung Rawa
94	Jakarta Pusat	Johar Baru	Galur
95	Jakarta Pusat	Johar Baru	Tanah Tinggi
96	Jakarta Pusat	Sawah Besar	Mangga Dua Selatan
97	Jakarta Pusat	Sawah Besar	Karang Anyar
98	Jakarta Pusat	Sawah Besar	Pasar Baru
99	Jakarta Pusat	Sawah Besar	Gunung Sahari Utara
100	Jakarta Pusat	Sawah Besar	Kartini
101	Jakarta Timur	Matraman	Kebon Manggis
102	Jakarta Timur	Matraman	Palmeriam
103	Jakarta Timur	Matraman	Kayu Manis
104	Jakarta Timur	Matraman	Utah Kayu Utara
105	Jakarta Timur	Matraman	Pisangan Baru
106	Jakarta Timur	Matraman	Utah Kayu Selatan
107	Jakarta Timur	Pulo Gadung	Kayu Putih
108	Jakarta Timur	Pulo Gadung	Rawamangun

**Table S/R-F1-1 Target Area for Survey A**

No.	Wilayah	Kecamatan	Kelurahan
109	Jakarta Timur	Pulo Gadung	Pisangan Timur
110	Jakarta Timur	Pulo Gadung	Jatinegara Kaum
111	Jakarta Timur	Pulo Gadung	Pulo Gadung
112	Jakarta Timur	Pulo Gadung	Cipinang
113	Jakarta Timur	Pulo Gadung	Jati
114	Jakarta Timur	Cakung	Rawa Terate
115	Jakarta Timur	Cakung	Jatinegara
116	Jakarta Timur	Cakung	Penggilingan
117	Jakarta Timur	Cakung	Cakung Barat
118	Jakarta Timur	Cakung	Ujung Menteng
119	Jakarta Timur	Cakung	Pulo Gebang
120	Jakarta Timur	Cakung	Cakung Timur
121	Jakarta Timur	Jatinegara	Kampung Melayu
122	Jakarta Timur	Jatinegara	Bali Mester
123	Jakarta Timur	Jatinegara	Bidara Cina
124	Jakarta Timur	Jatinegara	Cipinang Cempedak
125	Jakarta Timur	Jatinegara	Rawa Bunga
126	Jakarta Timur	Jatinegara	Cipinang Besar Selatan
127	Jakarta Timur	Jatinegara	Cipinang Muara
128	Jakarta Timur	Jatinegara	Cipinang Besar Utara
129	Jakarta Timur	Kramat	Cawang
130	Jakarta Timur	Kramat	Cililitan
131	Jakarta Timur	Kramat	Kramat Jati
132	Jakarta Timur	Kramat	Batu Ampar
133	Jakarta Timur	Kramat	Balekambang
134	Jakarta Timur	Kramat	Dukuh
135	Jakarta Timur	Kramat	Tengah
136	Jakarta Timur	Pasar Rebo	Gedong
137	Jakarta Timur	Pasar Rebo	Cijantung
138	Jakarta Timur	Pasar Rebo	Baru
139	Jakarta Timur	Pasar Rebo	Kali Sari
140	Jakarta Timur	Pasar Rebo	Pekayon
141	Jakarta Timur	Duren Sawit	Pondok Bambu
142	Jakarta Timur	Duren Sawit	Klender
143	Jakarta Timur	Duren Sawit	Duren Sawit
144	Jakarta Timur	Duren Sawit	Malaka Jaya
145	Jakarta Timur	Duren Sawit	Pondok Kelapa
146	Jakarta Timur	Duren Sawit	Pondok Kopi
147	Jakarta Timur	Makasar	Pinang Ranti
148	Jakarta Timur	Makasar	Makasar
149	Jakarta Timur	Makasar	Kebon Pala
150	Jakarta Timur	Makasar	Halim Perdana Kusuma
151	Jakarta Timur	Makasar	Cipinang Melayu
152	Jakarta Timur	Ciracas	Cibubur
153	Jakarta Timur	Ciracas	Kelapa Dua Wetan
154	Jakarta Timur	Ciracas	Ciracas
155	Jakarta Timur	Ciracas	Susukan
156	Jakarta Timur	Ciracas	Rambutan
157	Jakarta Timur	Cipayung	Pandok Rangon
158	Jakarta Timur	Cipayung	Cilangkap
159	Jakarta Timur	Cipayung	Munjul
160	Jakarta Timur	Cipayung	Cipayung
161	Jakarta Timur	Cipayung	Setu
162	Jakarta Timur	Cipayung	Bambu Apus
163	Jakarta Timur	Cipayung	Ceger
164	Jakarta Timur	Cipayung	Lubang Buaya
165	Jakarta Timur	Duren Sawit	Malaka Sari
166	Jakarta Timur	Duren Sawit	Malaka Sari
167	Jakarta Timur	Duren Sawit	Malaka Sari
168	Jakarta Timur	Duren Sawit	Malaka Sari
169	Jakarta Timur	Duren Sawit	Malaka Sari
170	Jakarta Timur	Duren Sawit	Malaka Sari
171	Jakarta Selatan	Tebet	Manggarai
172	Jakarta Selatan	Tebet	Manggarai Selatan

**Table S/R-F1-1 Target Area for Survey A**

No.	Wilayah	Kecamatan	Kelurahan
173	Jakarta Selatan	Tebet	Bukit Duri
174	Jakarta Selatan	Tebet	Menteng Dalam
175	Jakarta Selatan	Tebet	Tebet Timur
176	Jakarta Selatan	Tebet	Tebet Barat
177	Jakarta Selatan	Tebet	Kebon Baru
178	Jakarta Selatan	Setia Budi	Setiabudi
179	Jakarta Selatan	Setia Budi	Karet
180	Jakarta Selatan	Setia Budi	Karet Semanggi
181	Jakarta Selatan	Setia Budi	Karet Kuningan
182	Jakarta Selatan	Setia Budi	Menteng Atas
183	Jakarta Selatan	Setia Budi	Kuningan Timur
184	Jakarta Selatan	Setia Budi	Pasar Manggis
185	Jakarta Selatan	Setia Budi	Guntur
186	Jakarta Selatan	Mampang Prapatan	Kuningan Barat
187	Jakarta Selatan	Mampang Prapatan	Mampang Prapatan
188	Jakarta Selatan	Mampang Prapatan	Pela Mampang
189	Jakarta Selatan	Mampang Prapatan	Tegal Parang
190	Jakarta Selatan	Mampang Prapatan	Bangka
191	Jakarta Selatan	Pasar Minggu	Pejaten Barat
192	Jakarta Selatan	Pasar Minggu	Pasar Minggu
193	Jakarta Selatan	Pasar Minggu	Jati Padang
194	Jakarta Selatan	Pasar Minggu	Ragunan
195	Jakarta Selatan	Pasar Minggu	Cilandak Timur
196	Jakarta Selatan	Pasar Minggu	Kebagusan
197	Jakarta Selatan	Pasar Minggu	Pejaten Timur
198	Jakarta Selatan	Kebayoran Lama	Grogol Utara
199	Jakarta Selatan	Kebayoran Lama	Grogol Selatan
200	Jakarta Selatan	Kebayoran Lama	Cipulir
201	Jakarta Selatan	Kebayoran Lama	Kebayoran Lama Utara
202	Jakarta Selatan	Kebayoran Lama	Pondok Pinang
203	Jakarta Selatan	Kebayoran Lama	Kebayoran Lama Selatan
204	Jakarta Selatan	Cilandak	Gandaria Selatan
205	Jakarta Selatan	Cilandak	Cipete Selatan
206	Jakarta Selatan	Cilandak	Cilandak Barat
207	Jakarta Selatan	Cilandak	Lebak Bulus
208	Jakarta Selatan	Cilandak	Pondok Labu
209	Jakarta Selatan	Kebayoran Baru	Senayan
210	Jakarta Selatan	Kebayoran Baru	Rawa Barat
211	Jakarta Selatan	Kebayoran Baru	Selong
212	Jakarta Selatan	Kebayoran Baru	Gunung
213	Jakarta Selatan	Kebayoran Baru	Kramat Pela
214	Jakarta Selatan	Kebayoran Baru	Melawai
215	Jakarta Selatan	Kebayoran Baru	Petogogan
216	Jakarta Selatan	Kebayoran Baru	Pulo
217	Jakarta Selatan	Kebayoran Baru	Gandaria Utara
218	Jakarta Selatan	Kebayoran Baru	Cipete Utara
219	Jakarta Selatan	Pancoran	Pancoran
220	Jakarta Selatan	Pancoran	Duren Tiga
221	Jakarta Selatan	Pancoran	Kalibata
222	Jakarta Selatan	Pancoran	Cikoko
223	Jakarta Selatan	Pancoran	Pengadegan
224	Jakarta Selatan	Pancoran	Rawajati
225	Jakarta Selatan	Jagakarsa	Tanjung Barat
226	Jakarta Selatan	Jagakarsa	Jagakarsa
227	Jakarta Selatan	Jagakarsa	Lenteng Agung
228	Jakarta Selatan	Jagakarsa	Srengseng Sawah
229	Jakarta Selatan	Jagakarsa	Ciganjur
230	Jakarta Selatan	Jagakarsa	Cipedak
231	Jakarta Selatan	Pesanggrahan	Petukangan Utara
232	Jakarta Selatan	Pesanggrahan	Petukangan Selatan
233	Jakarta Selatan	Pesanggrahan	Ulujami
234	Jakarta Selatan	Pesanggrahan	Pesanggrahan
235	Jakarta Selatan	Pesanggrahan	Bintaro
236	Jakarta Utara	Penjaringan	Penjaringan

**Table S/R-F1-1 Target Area for Survey A**

No.	Wilayah	Kecamatan	Kelurahan
237	Jakarta Utara	Penjaringan	Pejagalan
238	Jakarta Utara	Penjaringan	Kapuk Muara
239	Jakarta Utara	Penjaringan	Kamal Muara
240	Jakarta Utara	Penjaringan	Pluit
241	Jakarta Utara	Tanjung Priok	Tanjung Priok
242	Jakarta Utara	Tanjung Priok	Papanggo
243	Jakarta Utara	Tanjung Priok	Sungai Bambu
244	Jakarta Utara	Tanjung Priok	Kebon Bawang
245	Jakarta Utara	Tanjung Priok	Sunter Agung
246	Jakarta Utara	Tanjung Priok	Sunter Jaya
247	Jakarta Utara	Tanjung Priok	Warakas
248	Jakarta Utara	Koja	Rawabadak Utara
249	Jakarta Utara	Koja	Koja
250	Jakarta Utara	Koja	Lagoa
251	Jakarta Utara	Koja	Tugu Selatan
252	Jakarta Utara	Koja	Rawabadak Selatan
253	Jakarta Utara	Koja	Tugu Utara
254	Jakarta Utara	Cilincing	Kalibaru
255	Jakarta Utara	Cilincing	Cilincing
256	Jakarta Utara	Cilincing	Semper Barat
257	Jakarta Utara	Cilincing	Marunda
258	Jakarta Utara	Cilincing	Sukapura
259	Jakarta Utara	Cilincing	Rorotan
260	Jakarta Utara	Cilincing	Semper Timur
261	Jakarta Utara	Pademangan	Ancol
262	Jakarta Utara	Pademangan	Pademangan Barat
263	Jakarta Utara	Pademangan	Pademangan Timur
264	Jakarta Utara	Kelapa Gading	Kelapa Gading Barat
265	Jakarta Utara	Kelapa Gading	Pegangsaan Dua
266	Jakarta Utara	Kelapa Gading	Kelapa Gading Timur

Note: Additional 5 residents of Kelurahan Malaka Sari were answered because of the parallel survey in the Project.

Source: JICA Expert Team

#### **F1.4 Survey Period and Survey team**

The period of Survey A is 27 days from 4<sup>th</sup> March to 30<sup>th</sup> March, 2011. The period of Survey B is 34 days from 11<sup>th</sup> March to 13<sup>th</sup> April, 2011.

One Japanese expert from JICA expert team and C/P members from BPLHD and PD PAL JAYA prepared, supervised and finalized the surveys. Local experts implemented the surveys and data processing. Local experts will consist of 9 persons.

#### **F1.5 Selection of Respondents**

##### **F1.5.1 Survey A**

In each Kelurahan, the respondents were basically one leader of Kelurahan and three types of residents; High-income level (hereinafter referred to as H-Level), Middle-income level (hereinafter referred to as M-Level) and Low-income level (hereinafter referred to as L-Level).

In the Old M/P, the income level was set according not to the actual income, but to the structure of houses as following;

- H-Level
  - Two-story very good house by good construction material with a garage for more than two cars and a large home garden
  - One or two-story good house by good construction material with a garage for one or two car and a large home garden
  
- M-Level
  - One or two-story medium class house by medium good construction material with a small garage and home garden

- Low-cost house by cheap material with a small home garden and no garage. Flats supplied by public housing company
- L-Level
- Some part of house is made by wood. With a small home garden and a low cost fence
  - Almost all part of house is made by wood. No home garden

In the Old M/P, the above criteria was not correlation with the actual incomes in each level, therefore, the ranges of each income level were not clear. To respond to the recent various housing types and to set the objective criteria, actual incomes and population in each income level were estimated in this Socio-Economic Survey.

Based on the average incomes in each Kecamatan shown in the Old M/P and data from World Bank, the smallest income in H-Level (Standard 1) was estimated by multiplying accumulations of Consumer Price Index (CPI) and GDP growth rate per capita from 1989 to 2009. With the same calculation, the largest income in L-Level (Standard 2) was estimated. By multiplying accumulation of CPI and the average incomes in each Kecamatan shown in the Old M/P, the estimated incomes, which were higher than Standard 1, were distinguished as H-Level, those, which were lower than Standard 2, were distinguished as L-Level and others were distinguished as M-Level. The estimation result is shown in the following table. It is found that population ratio was not changed after 2010 with the criteria in this Socio-Economic Survey.

**Table S/R-F1-2 Comparison between Estimation Ratio in This Study and Old M/P**

Year	Unit	Estimation Ratio in this Study			Actual and Estimation Ratio in 1989		
		H-Level	M-Level	L-Level	H-Level	M-Level	L-Level
1989	(%)	8.6%	44.6%	46.8%	3.9%	48.6%	47.5%
	(person)	753,781	3,924,652	4,119,226			
2010	(%)	6.9%	44.6%	48.5%	15.1%	48.8%	36.1%
	(person)	660,826	4,285,419	4,662,055			
2020	(%)	6.9%	44.6%	48.5%			
	(person)	748,177	4,839,372	5,261,727			
2030	(%)	6.9%	45.3%	47.8%			
	(person)	812,742	5,364,323	5,664,282			

Source: JICA Expert Team

Similarly, the average incomes of each income level were estimated by multiplying accumulations of CPI and GDP growth rate per capita from 1989 to 2009 with the estimation income of 2010 in the Old M/P and data from World Bank. According to this estimation, the ranges of each income level were set as the following table. The minimum range of M-Level and the maximum range of L-level are overlapped because there is not a big difference between the range of M-Level and that of L-Level.

**Table S/R-F1-3 Estimated Income Range of Each Income Level**

(per household per month)

H-Level	1) Less than IRD 10,999,999	2) IRD 11,000,000 – 11,999,999	3) IRD 12,000,000 – 12,999,999	4) IRD 13,000,000 – 13,999,999	5) More than IRD 14,000,000
M-Level	1) Less than IRD 3,999,999	2) IRD 4,000,000 – 4,999,999	3) IRD 5,000,000 – 5,999,999	4) IRD 6,000,000 – 6,999,999	5) More than IRD 7,000,000
L-Level	1) Less than IRD 999,999	2) IRD 1,000,000 – 1,999,999	3) IRD 2,000,000 – 2,999,999	4) IRD 3,000,000 – 3,999,999	5) More than IRD 4,000,000

Source: JICA Expert Team

The method to select respondents depends on each community leader. The final number of respondents is 1,059 persons including 261 leaders of Kelurahan and 266 residents in each income level (answer ratio: 100%).

### F1.5.2 Survey B

Respondents of Survey B are randomly selected from the water quality inspection list of BPLHD on the basis of the employee number and type of business, which is same as the Old M/P (7 kinds of business). The number of employee is set as three levels; more than 100 persons, more than 50 persons and less than 50 persons. The Project selected 54 enterprises as respondents, but finally 50 enterprises answered the questionnaires (answer ratio: 98%).

**Table S/R-F1-4 Respondents of Survey B**

Respondents Category	Planned Respondents				Actual Respondents			
	Large	Middle	Small	Total	Large	Middle	Small	Total
shop	6	3	3	12	6 (5)	2	3 (1)	11 (6)
factory	2	3	2	7	2	2	2	6
restaurant	2	0	1	3	2	0	0	2
hotel	6	2	2	10	6 (6)	2 (1)	2 (1)	10 (8)
hospital	2	3	2	7	2	2	2	6
office	6	3	2	11	6 (5)	3 (1)	2	11 (6)
school	1	1	2	4	1	1	2	4
Total				54				50 (20)

Note: numbers in ( ) shows the respondents in the Old M/P  
Source: JICA Expert Team

### F1.6 Implementation Method

For both surveys, the respondents received, answered and submitted the questionnaire sheets at the same time in one day. Only some respondents for Survey B could not answer in the same day, so the Project collected later.

### F1.7 Questionnaire Sheets and Results

Questionnaires are about sanitation and wastewater treatment, and there were five types according to the respondents for Survey A (H-Level, M-level, L-level and leaders) and Survey B. They are shown in appendix 1 and 2 respectively. All results are shown in appendix 3. Regarding to the results of Survey A, the results are summarized into Kecamatan level, and the each value shows the accumulation of each Kelurahan.

Regarding to the validity of this survey, JICA expert team can tell that the implementation method and number of samples are appropriate. As the selection of respondents for Survey A, respondents were selected by the leaders because general people were not used to answer such questionnaires, and the period and budget of the Project were limited. For the same reasons, respondents were selected from the variety of business type according to the Old M/P. Consequently, the respondents were reflected to the general population and enterprises as much as possible. In order to raise the reliability, the questionnaires were delivered and collected in the same day because it is impossible to obtain the high collection and answer ratios if the delivery and collection are implemented separately. Therefore the collection (answer) ratios are 100% and 98% for Survey A and B respectively. In a general socio-economic survey, a standard error is expected to be from - 5% to + 5%, however, 100 answers are enough for analysis to some extent. Hence, it can be said that this survey selected the practical implementation method and set the sample numbers.



## Appendix-1 : Survey-A

Answer Sheet (yellow part will be changed as K (leader of the community), RH (high income level), RM (middle income level) and RL (low income level))

Survey A-RL

No. RL-		Date of answer	
Wilayah		Kecamatan	
Kelurahan			

This questionnaire survey is implemented for the revision of the Wastewater Management Master Plan in DKI Jakarta.

Your answers will be summarized and used **ONLY** for the Project. Therefore, the sheets you answered are **NEVER** directly used and **NEVER** publicized. Also it is **NEVER** to specify the individuals in making summary.

If you have any difficulties to answer, please ask the surveyor freely.

(EXAMPLE)

1) YES 2) No

### 1. WATER USE

**Question category 1 is about how you use water in your daily life.**

1-1	If you buy bottled water in your daily life, how do you use it? Please circle <b>ALL</b> of the following options which apply to you.				
	1) Drinking	2) Cooking	3) Laundry	4) Bath, toilet	5) Watering the plants
	6) Selling	7) Not use			
1-2	If you use your private tap water (PAM) in your daily life, how do you use it? Please circle <b>ALL</b> of the following options which apply to you.				
	1) Drinking	2) Cooking	3) Laundry	4) Bath, toilet	5) Watering the plants
	6) Selling	7) Not use			
1-3	If you buy water from the seller or shop (not bottled water) in your daily life, how do you use it? Please circle <b>ALL</b> of the following options which apply to you.				
	1) Drinking	2) Cooking	3) Laundry	4) Bath, toilet	5) Watering the plants
	6) Selling	7) Not use			
1-4	If you use your private well in your daily life, how do you use it? Please circle <b>ALL</b> of the following options which apply to you.				
	1) Drinking	2) Cooking	3) Laundry	4) Bath, toilet	5) Watering the plants
	6) Selling	7) Not use			
1-5	If you use shared well and/or tap water in your daily life, how do you use it? Please circle <b>ALL</b> of the following options which apply to you.				
	1) Drinking	2) Cooking	3) Laundry	4) Bath, toilet	5) Watering the plants
	6) Selling	7) Not use			
1-6	If you use other water source in your daily life, how do you use it, such as rivers and ponds? Please circle <b>ALL</b> of the following options which apply to you.				
	1) Drinking	2) Cooking	3) Laundry	4) Bath, toilet	5) Watering the plants
	6) Selling	7) Not use			
1-7	How much does your family use water in a day? Please circle <b>ONLY ONE</b> option from the following options which apply to you (A very rough number is OK).				
	1) 0-100 L/day	2) 101-200 L/day	3) 201-300 L/day	4) 301-400 L/day	5) 401-500 L/day
	6) more than 500 L/day	7) Unknown			
1-8	How much does your family pay a water tariff in a month (Rp/month/household)? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Less than Rp. 20,000	2) Rp. 20,001 – Rp. 30,000	3) Rp. 30,001 – Rp. 40,000	4) Rp. 40,001 – Rp. 50,000	5) More than Rp. 50,001

### 2. SANITATION FACILITY AND SITUATION

**Question category 2 is about your sanitation facility and situation**




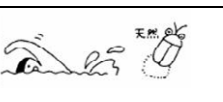




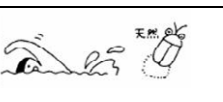



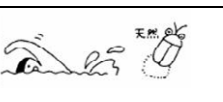


2-1	Do you have your private toilet? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Yes 2) No				
	<b>If you answer Yes, please go to Question 2-1-1 to 2-1-6. If you answer No, please go to Question 2-1-7 to 2-1-8.</b>				
	<b>From the Question 2-1-1 to 2-1-6, only the respondents, who choose option 1) in the Question 2-1, will answer.</b>				
2-1-1	Where is your private toilet? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) In the house	2) In front of the	3) In the backyard	4) Next to the house	5) Place within 10m

		house			from the house
	6) Place more than 10m from the house	7) Others			
2-1-2	Where is the final destination from your private toilet? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Septic tank	2) Pit latrine	3) Open channel	4) Sewage pipe	5) Pond
	6) Water basin	7) Modified septic tank	8) Others	9) Unknown	
2-1-3	How often do you remove the sewage sludge? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) More than 1 time in a year	2) 1 time in a year	3) 1 time in two years	4) 1 time in three years	5) 1 time in more than four years
	6) Never remove the sludge	7) Unknown			
2-1-4	How do you remove the sewage sludge? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Call a private company	2) Call a cleaning person	3) Remove by myself or my family	4) Call a public agency (such as DKI Jakarta, PD PAL JAYA, etc.)	
2-1-5	Do you know the importance to remove the sewage sludge and how do you think about it? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) I know and I think it is necessary	2) I do not know, but I think it is necessary.	3) I know, but I do not think it is necessary	4) I do not know, and I do not think it is necessary.	5) I have no idea
2-1-6	What is your problem on your private toilet? Please circle <b>ALL</b> of the following options which apply to you.				
	1) Overflow in the house	2) Overflow outside of the house	3) High price of removing the sludge	4) Taking time to call a private or public company	5) Toilet is near the well (water source)
	6) Others [ _____ ] (please write down the problems briefly)				
	<b>Please go to Question 2-2</b>				
	<b>From the Question 2-1-7 to 2-1-8, only the respondents, who choose option 2) in the Question 2-1, will answer.</b>				
2-1-7	Which facility do you use for toilet? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Toilets in neighboring houses	2) MCK	3) Vacant land	4) River, pond, open channel, drainage	5) Others
2-1-8	How far from your house is the facility of Question 2-1-7? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Within 10m from the house		2) More than 10m from the house		
	<b>Please go to Question 2-2</b>				
	<b>Now all respondents answer the following Questions.</b>				
2-2	Question 2-2 is about the waste water from the kitchen, laundry and bathroom.				
2-2-1	Where is the final destination of the waste water? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Septic tank	2) Pit latrine	3) Open channel	4) Sewage pipe	5) Pond
	6) Water basin	7) Modified septic tank	8) Others	9) Unknown	
2-2-2	What is your problem on the waste water? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Overflow in the house frequently	2) Overflow in the house sometimes	3) Overflow outside the house frequently	4) Overflow outside the house sometimes	5) ) Toilet is near the well (water source)
	6) Others				
2-3	Question 2-3 is about MCK (Mandi-Cudi-Kakus) facility.				
2-3-1	Is MCK facility near your house? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Yes      2) No				
2-3-2	How often do you use MCK facility? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Everyday	2) 2-3 times in a week	3) One time in a week	4) One time in a month	5) Rare to use
2-3-3	How often do you use a toilet in MCK facility? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Everyday	2) 2-3 times in a week	3) One time in a week	4) One time in a month	5) Rare to use

		week	week	month	
2-3-4	How do you think about the number of MCK facility? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Not enough	2) Enough	3) Too much	4) Unknown	
2-3-5	How do you think about the user fee for MCK facility? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Too expensive	2) Affordable	3) Cheap	4) Unknown	
2-3-6	How do you think the surrounding environment of MCK facility? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) I am satisfied with the existing condition.	2) Flush toilet should be installed.	3) It is dirty and has offensive odor.	4) Unknown	
2-3-7	How do you think MCK facility? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) It is necessary.	2) Unknown	3) It is not necessary because the fee is expensive.	4) It is not necessary because of other reasons except for the fee.	
2-3-8	If you have any comments about MCK facility, please write down briefly.				
2-4	Question 2-4 is about your household wastes How do you dispose your wastes? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Public collection service	2) Dispose into rivers	3) Dispose on the road	4) Dispose in the vacant space	
2-5	Question 2-5 is about diseases which your family members suffered, and they received the hospital treatment in these 6 months. Which kind of diseases, which necessary for the hospital treatment, did your family members suffer? Please circle <b>ALL</b> of the following options which apply to you.				
	1) Diarrhea	2) Dengue fever	3) Flu	4) Skin diseases	5) Polio
	6) Other diseases				
2-6	Question 2-6 is about the sanitary situation.				
2-6-1	How is your sanitary situation now? (sanitary situation: keeping and promoting health through prevention of human contact with the causes of health problems (such as solid wastes, domestic wastewater, etc. ) Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Very good	2) Good	3) OK	4) Not good	5) Bad
2-6-2	<b>Question 2-6-2 is for only the respondents, who choose option 4) or 5) in the Question 2-6-1.</b> What are the reasons to choose 4) or 5) in the Question 2-6-1? Please circle <b>ALL</b> of the following options which apply to you.				
	1) Mosquitoes	2) Flies	3) Mice	4) Suffering diarrhea frequently	5) Others
2-6-3	<b>Question 2-6-3 and 2-6-5 is for all respondents,</b> How do you think about the improvement of your sanitary situation? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) I want to improve by my own money	2) I want to cooperate with the improvement work by the government even though I should pay some money.	3) I want to cooperate with the improvement work by the government if I do not need to pay any money.	4) I do not want to cooperate with the improvement work by the government.	
2-6-4	In 1991, DKI Jakarta established PD PAL JAYA (Perusahaan Daerah Pengelolaan Air Limbah DKI Jakarta) in purpose of installation, operation and maintenance of sewage facility (pipes and treatment plants). The main activities of PD PAL JAYA is to install new sewage pipes, to operate small scale private sewage facilities under the sub-contract, to operate and maintain the sewage treatment plant, to collect fee for the sewage service, etc. Do you know about it? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Yes, I know the name and its work.	2) I know just a name.	3) I do not know.		
2-6-5	Do you know which organizations involve for sewage service? Please circle <b>ALL</b> of the following options which apply to you.				
	1) PD PAL JAYA	2) Cleansing agency of DKI Jakarta	3) Housing agency of DKI Jakarta	4) Public works of DKI Jakarta	5) Private company
	6) NGOs (Non-governmental organization)	7) Community			

### 3. WILLINGNESS TO PAY FOR SEWAGE SERVICE

Question category 3 is about your willingness to pay for a sewage service.

3	<p>Please look at the Table 1. This shows the level of cleanness of water environment, such as a river. Please look at the Picture 1. The present situation is level D. Untreated waste water flows to river, and water environment around living area really becomes worse. Level D = Polluted and offensive odor, Debris deposits, Unhygienic and caused habitual diarrhea</p>												
	<table border="1" style="width: 100%;"> <tr> <td colspan="3" style="text-align: center;">Table 1 Water Environment</td> </tr> <tr> <td rowspan="4" style="width: 15%; text-align: center;">Water Environment Level</td> <td style="width: 15%; text-align: center;">Polluted</td> <td style="width: 70%;">                     Level D : Polluted, Offensive Odor   </td> </tr> <tr> <td style="text-align: center;">Clean</td> <td>                     Level C : Possible to catch fish   </td> </tr> <tr> <td style="text-align: center;">Clean</td> <td>                     Level B : Possible to play in the water, Rich biodiversity   </td> </tr> <tr> <td style="text-align: center;">Clean</td> <td>                     Level A : Possible to swim, Not harmful to drink   </td> </tr> </table> <div style="text-align: right; margin-top: 10px;">               Picture 1 Present Level         </div>	Table 1 Water Environment			Water Environment Level	Polluted	Level D : Polluted, Offensive Odor 	Clean	Level C : Possible to catch fish 	Clean	Level B : Possible to play in the water, Rich biodiversity 	Clean	Level A : Possible to swim, Not harmful to drink 
Table 1 Water Environment													
Water Environment Level	Polluted	Level D : Polluted, Offensive Odor 											
	Clean	Level C : Possible to catch fish 											
	Clean	Level B : Possible to play in the water, Rich biodiversity 											
	Clean	Level A : Possible to swim, Not harmful to drink 											
	<p>Please look at the Picture 2 and 3. Public sanitation will be improved through prevention of stagnant water around living area, smooth discharge domestic wastewater to sewer system and so on. Public water environment conservation and improvement will be achieved via wastewater treatment. People can enjoy water amenity environment.</p>												
	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">               Picture 2 Effective Drainage         </div> <div style="text-align: center;">               Picture 3 Water is not polluted         </div> </div>												
	<p><b>Based on this assumption, please answer the following Questions.</b></p>												
3-1	<p>For sustainable public sanitation and water environment conservation and/or improvement, sewerage facilities shall be operated and maintained in proper condition, and expanded to the planned service area through stepwise development plan. In accordance with the beneficially-payment principle, operation and maintenance cost of sewerage facilities <b>shall be shared among beneficiaries in the service area</b> as much as possible. In line with the above said background, could you accept to pay Rp. 20,000 per family per month for a sewerage tariff (equivalent to 4 liter of rice)? Please circle <b>ONLY ONE</b> option from the following options which apply to you.</p>												
	<p>1) Yes            2) No</p>												
	<p><b>If you answer Yes in Question 3-1, please go to Question 3-4 and 3-5.</b></p>												
	<p><b>If you answer No in Question 3-1, please go to Question 3-2 and 3-3.</b></p>												
	<p><b>Question 3-2 and 3-3 are for only the respondents, who choose No in the Question 3-1.</b></p>												
3-2	<p>Please write down the reason briefly why you answer No in Question 3-1.</p>												
	<p> </p>												
3-3	<p>Could you accept to pay Rp. 16,000 per family per month for a sewerage tariff? Please circle <b>ONLY ONE</b> option from the following options which apply to you.</p>												
	<p>1) Yes            2) No</p>												
	<p><b>Question 3-2 and 3-3 are for only the respondents, who choose Yes in the Question 3-1.</b></p>												
3-4	<p>Could you accept to pay Rp. 24,000 per family per month for a sewerage tariff? Please circle <b>ONLY ONE</b> option from the following options which apply to you.</p>												
	<p>1) Yes            2) No</p>												
3-5	<p><b>If you answer No in Question 3-4, please write down the reason briefly why you answer No in Question 3-4.</b></p>												

3-6	<b>For all respondents, please answer Question 3-6.</b> Please write down your opinion briefly about satisfaction level, complain or requirement for sewerage service if you have.
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#### 4. GENERAL

Question category 4 is about you and your family.

4-1	How long have you lived in your present house? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Less than 10 years	2) 10-20 years	3) 21- 30 years	4) 31-60 years	5) More than 61 years
4-2	Which housing type is applied to your house? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Private house (settled)	2) Private house (credit)	3) Apartment house	4) Rental house	5) Building attached with the commercial building
	6) Row house	7) Others			
4-3	Who has the ownership of your house? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) My family	2) Rental	3) Public agency	4) Others	
4-4	How many family members are there in your family? Please write down the number of adult and the number of child. The child means the person whose age is under 17 years old.				
	Adult (more than 18 years old) [     ] persons				
	Child (less than 17 years old) [     ] persons				
4-5	How much is the total monthly income of your family? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Less than Rp. 999,999	2) Rp. 1,000,000 – 1,999,999	3) Rp. 2,000,000 – 2,999,999	4) Rp. 3,000,000 – 3,999,999	5) More than Rp. 4,000,000
4-6	Who is the head of your family? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Myself	2) Husband	3) Wife	4) Father	5) Mother
	6) Son	7) Daughter	8) Others		
4-7	Please select your gender.				
	1) Male     2) Female				
4-8	How old are you? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Less than 20 years old	2) 21-30 years old	3) 31-40 years old	4) 41-50 years old	5) 51-60 years old
	6) More than 61 years old				
4-9	What is your job? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Office worker (full time)	2) Self-employed	3) Public official (full time)	4) Farmer	5) Fisher
	6) Part-time worker	7) Retired or Unemployed	8) House keeper	9) Others	
4-10	What is your academic background? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Not Finished the elementary school	2) Finished the elementary school	3) Not finished the junior high school	4) Finished the junior high school	5) Not finished the high school
	6) Finished the high school	7) Not finished the university	8) Finished the university	9) Others	

This is the end of the questionnaire. Thank you very much for your cooperation.

Again, the sheets you answered are **NEVER** directly used and publicized. Also it is **NEVER** to specify the individuals in making summary.

If you have any questions, please contact with our office and experts as shown in the letter.

We highly appreciate your kind cooperation.

Only for leaders

2-7	Question 2-7 is about MCK or public toilets in your community.				
2-7-1	Does your community have MCK or public toilets? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Yes      2) No				
	<b>If you answer Yes in Question 2-7-1, please answer Question 2-7-2 to 2-7-9. If you answer No in Question 2-7-1, please go to Question 2-7-10.</b>				
	<b>Question 2-7-2 to 2-7-8 are for only the respondents, who choose Yes in the Question 2-7-1.</b>				
2-7-2	How many places (numbers) of MCK, toilets of MCK, or public toilets in your community?				
	MCK: [            ] places and [            ] toilets in all MCKs Public toilet: [            ] places				
2-7-3	Which organization built the MCK or public toilets? Please circle <b>ALL</b> of the following options which apply to you.				
	1) Public agency (public works sector)	2) Public agency (health service sector)	3) Public agency (other sectors)	4) International donors	5) Others
2-7-4	What was the role of the community to build MCK or public toilets? Please circle <b>ALL</b> of the following options which apply to you.				
	1) Provide a land	2) Planning and designing	3) Cooperation with construction (such as dispatch of workers)	4) Nothing	5) Others
2-7-5	Who manage the MCK or public toilets in your community? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Community leader	2) A person in charge of MCK or public toilets in the community	3) Local public officer	4) Investor	5) Others
2-7-6	Who uses the MCK or public toilets in your community? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) All community members	2) About a half of community members	3) About one third of community members	4) Very few community members	5) Nobody
2-7-7	How much do users pay for the MCK or public toilets? If users do not pay anything, please circle option No. 1. If users pay something, please write down the value.				
	1) Free of charge    2) [            ] Rp. per person per day				
2-7-8	How do users pay for the MCK or public toilets? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) No rules of fee collection	2) Manager of MCK or public toilets visits each house and collects the fee.	3) Each house pay together with other fee.	4) Community pays from the community fund.	5) Others
2-7-9	How much does your community pay for usual operation and maintenance (including repair) for the MCK or public toilets?				
	Total: [            ] Rp. per month per one MCK or public toilet				
	<b>For all respondents, please answer Question 2-7-10.</b>				
2-7-10	Please write down your opinion about MCK or public toilets briefly if you have.				

2-8	Question 2-8 is about the soak type septic tank.		
2-8-1	Wastewater from the soak type septic tank can cause the groundwater pollution. It can lead many infectious diseases and deaths of infants by use of well water (polluted groundwater). Do you know this fact? Please circle <b>ONLY ONE</b> option from the following options which apply to you.		
	1) Yes      2) No		
2-8-2	One of the preventive measures is to change into the modified type septic tank. How do you think of your community reaction to this improvement idea? Please circle <b>ONLY ONE</b> option from the following options which apply to you.		
	1) I think our community will agree to this idea.	2) I do not think our community will agree to this idea.	3) I do not know.
2-8-3	In case to improve the septic tank, which capacity is for one household, into the modified type, it will cost about		

	Rp. 4,000,000. How much can your community share the cost for this improvement? Please circle <b>ONLY ONE</b> option from the following options which apply to you.				
	1) Rp. 4,000,000 per one septic tank (the full amount)	2) Less than Rp. 3,000,000 per one septic tank (75% of the full amount)	3) Less than Rp. 2,000,000 per one septic tank (50% of the full amount)	4) Less than Rp. 1,000,000 per one septic tank (25% of the full amount)	5) Less than Rp. 400,000 per one septic tank (10% of the full amount)
	6) Less than Rp. 200,000 per one septic tank (5% of the full amount)	7) Our community cannot share the cost at all.			

2-9	Question 2-9 is about SANIMAS (Sanitasi Masyarakat).
2-9-1	Do you know SANIMAS? Please circle <b>ONLY ONE</b> option from the following options which apply to you.
	1) Yes      2) No
2-9-2	Please write down your opinion about SANIMAS briefly if you have.

2-10	Question 2-10 is about the need of sewage system. How do you think of the sewage system? Please circle <b>ONLY ONE</b> option from the following options which apply to you.
	1) Sewage system must be constructed all over Jakarta as soon as possible in order to make it clean, free from water-borne diseases and repelling odor, even if it strains national budget and demands as outlay from home economy.
	2) Construction of sewage system should be started where water pollution is the most severe because full costs cannot be borne at a time. As the nation and the people get richer, it should be expanded to wider areas. Gradual approach is necessary for the resolution of the existing unsanitary conditions.
	3) Sewage system should be constructed only where rich people reside. Average citizens, now already burdened with expensive water and electricity bills, cannot afford to it. Furthermore, they now do not feel an urgent need for it because the lack of it does not directly affect their daily lives.
	4) The nation and the people cannot afford to such a luxury as sewage system. On-site sanitation facilities such as individual toilets with leaching pit, soak away and septic tank, and public toilet can suffice as an alternative for it. The government should promote their installation.

4-12	How many people (both recorded and non-recorded) and household are there in your community? Please write down the numbers of people and/or the numbers of households.
	[            ] persons in the community [            ] households in the community
4-13	How large is your community
	[            ] km <sup>2</sup> [            ] ha

## Appendix-1 : Survey-B

Answer Sheet  
Survey B

No.		Date of answer	
Wilayah		Kecamatan	
Kelurahan			

### 1. BUILDING

1-1	Land area being occupied			
	About [            ] m <sup>2</sup>			
1-2	Story of building Please circle <b>ONLY ONE</b> option.			
	1) One-story	2) Two-story	3) Three-story	4) Four-story
				5) More than five-story
1-3	Total floor area			
	About [            ] m <sup>2</sup>			
1-4	Capacity (accommodation) Please circle <b>ONLY ONE</b> option.			
	1) Less than 10 persons	2) Less than 20 persons	3) Less than 40 persons	4) Less than 80 persons
	6) More than 100 persons			5) Less than 100 persons
1-5	Constructed year Please circle <b>ONLY ONE</b> option.			
	1) Less than 5 years ago	2) Less than 10 years ago	3) Less than 20 years ago	4) Less than 30 years ago
	6) Less than 50 years ago	7) More than 50 years ago		5) Less than 40 years ago
1-6	Construction cost			
	1) Unknown      2) About Rp. [            ]			
1-7	Number of company in the building Please circle <b>ONLY ONE</b> option.			
	1) Only one company	2) Less than 5 companies	3) Less than 10 companies	4) Less than 20 companies
				5) More than 20 companies
1-8	Building ownership Please circle <b>ONLY ONE</b> option.			
	1) Our company	2) Rental	3) Central government	4) Local government
				5) Others
1-9	Type of use Please circle <b>ALL</b> options which apply to the respondent.			
	1) Office	2) Factory	3) Commercial business	4) Service business
	6) Others			5) Residential space

### 2. WATER USE

2-1	Drinking water source Please circle <b>ALL</b> options which apply to the respondent.			
	1) Tap water (PAM)	2) Purchase by the private water selling company	3) Private well	4) Shared well or tap water
				5) Others
2-2	Other water source Please circle <b>ALL</b> options which apply to the respondent.			
	1) Tap water (PAM)	2) Purchase by the private water selling company	3) Private well	4) Shared well or tap water
	6) Others			5) Recycled water
2-2-1	<b>If the respondent chose 3), ask the depth of the well.</b>			
	About [            ] m			
2-2-2	<b>If the respondent chose 5), ask the how much or how much percentage of use.</b>			
	About [            ] L/day or About [            ] L/month or About [            ] % of total water use			
2-3	Number of toilet in the building Please circle <b>ONLY ONE</b> option.			
	1) 1	2) 2	3) 3	4) 4
				5) 5



	6) Less than 10	7) More than 10	8) Nothing		
2-4	Number of kitchen Please circle <b>ONLY ONE</b> option.				
	1) 1	2) 2	3) 3	4) 4	5) 5
	6) Less than 10	7) More than 10	8) Nothing		
2-5	Number of shower room Please circle <b>ONLY ONE</b> option.				
	1) 1	2) 2	3) 3	4) 4	5) 5
	6) Less than 10	7) More than 10	8) Nothing		
2-6	Number of other space where people use water Please circle <b>ONLY ONE</b> option.				
	1) 1	2) 2	3) 3	4) 4	5) 5
	6) Less than 10	7) More than 10	8) Nothing		
2-7	Volume of water use in the building per day or month				
	About [                    ] L/day				
	About [                    ] L/month				

### 3. WASTEWATER TREATMENT

3-1	Method of wastewater treatment facility Please circle <b>ONLY ONE</b> option.				
	1) Septic tank	2) Standard activated sludge method	3) Extended aeration process	4) Batch mode treatment process	5) Contact aeration process
	6) Rotary disc method	7) Modified septic tank	8) Other treatment methods	9) No treatment facility	10) Sewerage
	<b>If the respondent answered 1) – 8) in Question 3-1, ask the following questions. If the respondent answered 9) in Question 3-1, go to Question 3-14.</b>				
3-2	Installation year and month of the treatment facility				
	Month [                    ] Year [                    ]				
3-3	Installation cost				
	1) [                    ] Rp. 2) Unknown				
3-4	Installation place of the treatment facility Please circle <b>ONLY ONE</b> option.				
	1) Inside the building	2) Under the building	3) Place within 10m	4) Place more than 10m	
3-5	Operation situation of the treatment facility Please circle <b>ONLY ONE</b> option.				
	1) Appropriate operation everyday	2) Appropriate operation except for once a week	3) Appropriate operation except for three times a week	4) Inappropriate operation	
	<b>If the respondent answered 2), 3) and 4) in Question 3-5, ask the following Question 3-5-1 and 3-5-2. If the respondent answered 1) in Question 3-5, go to Question 3-6.</b>				
3-5-1	What part (equipment) is operate inappropriately?				
	Name of the part (equipment):				
3-5-2	What are the reasons of the inappropriate operation?				
3-6	Treatment capacity				
	About [                    ] L/day				
3-7	Achieved maximum treatment capacity				
	About [                    ] L/day				
3-8	Treated water quality				
	Quality item and its value:				
3-9	Method of operation and maintenance				
	1) By outsourcing with private company (company name and phone number:                    )				
	2) By the company themselves	3) No operation and maintenance	4) Unknown		
3-10	Cost of operation and maintenance				
	About [                    ] Rp. per month				
	About [                    ] Rp. per year				
3-11	Frequency of sludge removal Please circle <b>ONLY ONE</b> option.				
	1) More than 1 time in a year	2) 1 time in a year	3) 1 time in two years	4) 1 time in three years	5) 1 time in more than four years

	6) Never remove the sludge	7) Unknown			
3-12	Method of sludge removal Please circle <b>ONLY ONE</b> option.				
	1) Call a private company	2) Call a cleaning person	3) Remove by myself or my family	4) Call a public agency (such as DKI Jakarta, PD PAL JAYA, etc.)	
3-13	Do you know the importance to remove the sewage sludge and how do you think about it? Please circle <b>ONLY ONE</b> option.				
	1) I know and I think it is necessary	2) I do not know, but I think it is necessary.	3) I know, but I do not think it is necessary	4) I do not know, and I do not think it is necessary.	5) I have no idea
3-14	Final destination of wastewater Please circle <b>ONLY ONE</b> option.				
	1) Septic tank	2) Pit latrine	3) Open channel	4) Sewage pipe	5) Pond
	6) Water basin	7) Modified septic tank	8) Others	9) Unknown	
3-15	Have you done anything after the regulation of wastewater in 2005? If you did, what kind of action did you do? Please circle <b>ONLY ONE</b> option.				
	1) Yes. Action:				
	2) No				
3-16	Report to BPLHD Please circle <b>ONLY ONE</b> option. (If the respondents have records, please ask them to copy.)				
	1) 2 times a year. We have records.	2) 2 times a year. We do not have records.	3) 1 time a year. We have records.	4) 1 time a year. We do not have records.	5) Never
3-17	Experience of inspection by BPLHD Please circle <b>ONLY ONE</b> option.				
	1) Yes                      2) No				
3-18	What is your problem about wastewater treatment?				
3-19	In 1991, DKI Jakarta established PD PAL JAYA (Perusahaan Daerah Pengelolaan Air Limbah DKI Jakarta) in purpose of installation, operation and maintenance of sewage facility (pipes and treatment plants). The main activities of PD PAL JAYA is to install new sewage pipes, to operate small scale private sewage facilities under the sub-contract, to operate and maintain the sewage treatment plant, to collect fee for the sewage service, etc. Do you know about it?				
	1) Yes, I know the name and its work.	2) I know just a name.	3) I do not know.		

#### 4. GENERAL

4-1	Business type Please circle <b>ONLY ONE</b> option.				
	1) Agriculture, Forestry, Fishing and Hunting	2) Mining	3) Utilities	4) Construction	5) Manufacturing
	6) Wholesale Trade	7) Retail Trade	8) Transportation and Warehousing	9) Information	10) Finance and Insurance
	11) Real Estate and Rental and Leasing	12) Professional, Scientific, and Technical Services	13) Management of Companies and Enterprises	14) Administrative and Support and Waste Management and Remediation Services	15) Education Service
	16) Health Care and Social Assistance	17) Arts, Entertainment, and Recreation	18) Accommodation and Food Services	19) Other Services (except Public Administration)	20) Public Administration
4-2	Number of workers Please circle <b>ONLY ONE</b> option.				
	1) Less than 10 persons	2) Less than 20 persons	3) Less than 40 persons	4) Less than 80 persons	5) Less than 100 persons
	6) More than 100 persons				
4-3	Year of the business commencement Please circle <b>ONLY ONE</b> option.				
	1) Less than 5 years ago	2) Less than 10 years ago	3) Less than 20 years ago	4) Less than 30 years ago	5) Less than 40 years ago
	6) Less than 50 years	7) More than 50			

	ago	years ago			
4-4	Title of the respondent				
4-5	Gender of the respondent 1) Male    2) Female				
4-6	Age of the respondent Please circle <b>ONLY ONE</b> option.				
	1) Less than 20 years old	2) 21-30 years old	3) 31-40 years old	4) 41-50 years old	5) 51-60 years old
	6) More than 61 years old				



Number of Answer

			1-2																															
			If you use your private tap water (PAM) in your daily life, how do you use it?																															
			Multiple Choice																															
			1				2				3				4				5				6				7							
			Drinking				Cooking				Laundry				Bath, toilet				Watering the plants				Selling				Not use							
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	2	4	2	3	4	6	5	2	3	3	5	3	2	3	5	3	0	1	2	0	0	0	0	0	2	1	1	3				
2	Jakarta Barat	Taman Sari	0	3	0	0	6	5	3	4	5	6	5	3	5	6	5	3	0	0	1	1	0	0	0	0	2	0	3	3				
3	Jakarta Barat	Tambora	1	0	2	0	5	9	8	2	4	8	5	5	3	9	5	6	0	1	1	2	0	0	0	0	6	1	2	5				
4	Jakarta Barat	Kebon Jeruk	3	1	1	0	3	2	4	5	4	1	4	6	4	2	4	6	1	1	1	1	0	0	0	0	3	4	3	1				
5	Jakarta Barat	Palmerah	0	2	0	1	2	1	0	1	2	3	3	2	2	2	3	4	0	1	0	1	0	0	0	0	4	2	3	2				
6	Jakarta Barat	Kembangan	0	0	0	0	0	1	0	1	0	1	1	1	0	1	1	1	0	0	0	0	0	0	0	6	5	5	5					
7	Jakarta Barat	Cengkareng	2	3	2	2	5	6	5	5	5	2	5	3	5	3	5	2	2	1	1	1	0	0	0	0	1	0	1	1				
8	Jakarta Barat	Kalideres	0	0	1	1	1	2	3	3	2	3	2	3	2	3	2	3	1	0	2	3	0	0	0	0	3	2	1	1				
9	Jakarta Pusat	Gambir	0	2	1	1	3	5	4	3	4	4	2	4	4	4	2	4	1	2	1	2	1	0	0	0	1	0	1	2				
10	Jakarta Pusat	Kemayoran	2	4	1	2	3	6	5	4	3	2	3	3	3	2	1	2	1	1	0	0	0	0	0	4	1	2	2					
11	Jakarta Pusat	Senen	2	4	1	1	2	5	3	0	2	3	3	3	2	2	2	3	0	0	2	1	0	0	0	3	1	1	2					
12	Jakarta Pusat	Cempaka Putih	1	0	1	0	3	1	2	2	2	1	2	0	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0	1				
13	Jakarta Pusat	Menteng	1	2	1	3	3	3	2	3	2	4	2	4	2	4	3	4	1	3	1	3	0	0	0	0	2	1	2	0				
14	Jakarta Pusat	Tanah Abang	0	0	1	0	4	4	4	2	4	4	4	3	4	4	4	3	1	0	2	2	0	0	0	3	3	2	4					
15	Jakarta Pusat	Johar Baru	4	2	1	3	1	2	2	4	1	2	3	2	2	0	2	1	1	0	1	0	0	0	0	0	1	1	1	0				
16	Jakarta Pusat	Sawah Besar	1	1	4	2	2	3	5	3	1	2	3	1	1	2	3	1	1	0	2	1	0	0	0	2	2	0	2					
17	Jakarta Timur	Matraman	0	0	1	1	2	1	0	2	3	3	1	2	3	2	1	2	3	1	0	2	0	0	0	3	3	5	4					
18	Jakarta Timur	Pulo Gadung	0	0	1	0	3	2	2	1	4	4	3	4	3	5	3	4	3	3	2	3	1	0	0	3	2	4	3					
19	Jakarta Timur	Cakung	0	1	0	3	4	3	4	5	5	5	5	4	5	5	5	4	2	3	3	3	0	0	0	0	2	2	1	2				
20	Jakarta Timur	Jatinegara	1	1	2	3	2	1	3	4	3	1	5	5	3	1	5	5	0	1	1	1	0	0	0	5	6	3	3					
21	Jakarta Timur	Kramat	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	1	0	0	1	1	0	0	0	7	7	6	6					
22	Jakarta Timur	Pasar Rebo	0	1	0	0	0	2	0	1	1	2	0	1	1	1	0	1	1	1	0	0	0	0	0	4	3	5	4					
23	Jakarta Timur	Duren Sawit	1	1	0	0	1	1	2	3	1	1	2	3	1	1	2	3	1	1	0	4	0	0	0	5	4	4	1					
24	Jakarta Timur	Makasar	1	1	0	1	2	1	1	1	2	2	1	0	1	2	0	0	1	1	0	0	0	0	0	3	3	4	4					
25	Jakarta Timur	Ciracas	0	1	0	1	0	2	0	1	1	3	0	2	2	3	0	2	1	0	0	2	0	0	0	3	2	5	3					
26	Jakarta Timur	Cipayung	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	8	7	8	7					
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	1	2	0	2	5	5	0	3	5	4	0	3	4	4	0	1	2	3	0	0	0	0	3	0	1	1					
27	Jakarta Selatan	Tebet	1	2	1	0	2	6	3	2	2	6	5	4	2	5	4	3	0	3	3	3	0	0	0	5	1	2	3					
28	Jakarta Selatan	Setia Budi	1	0	1	1	3	3	4	4	3	3	3	5	2	3	3	6	3	3	3	3	0	0	0	5	5	4	2					
29	Jakarta Selatan	Mampang Prapatan	1	1	1	2	1	1	1	1	1	2	1	2	0	2	1	1	0	1	1	0	0	0	0	4	3	4	3					
30	Jakarta Selatan	Pasar Minggu	1	1	1	2	2	1	1	5	4	1	1	3	2	1	2	3	1	1	0	2	0	0	0	3	5	5	1					
31	Jakarta Selatan	Kebayoran Lama	1	1	1	1	1	1	1	2	1	3	1	2	1	2	1	1	0	3	1	2	0	0	0	5	3	5	3					
32	Jakarta Selatan	Cilandak	0	0	1	1	0	1	0	1	0	2	0	2	0	2	0	2	0	0	0	2	0	0	0	5	3	4	3					
33	Jakarta Selatan	Kebayoran Baru	0	1	0	1	1	3	1	2	3	3	1	1	3	3	1	1	0	1	0	0	0	0	7	7	9	8						
34	Jakarta Selatan	Pancoran	0	1	0	3	1	1	3	3	2	1	4	4	2	1	4	3	1	1	2	2	0	0	0	4	5	1	2					
35	Jakarta Selatan	Jagakarsa	2	0	1	1	2	0	2	1	2	2	2	2	0	2	1	1	0	2	0	0	0	0	4	5	4	3						
36	Jakarta Selatan	Pesanggrahan	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	5	5	4	4					
37	Jakarta Utara	Penjaringan	1	0	0	1	4	3	4	2	4	4	5	3	4	4	5	3	0	0	4	2	0	0	0	1	1	0	2					
38	Jakarta Utara	Tanjung Priok	2	0	2	1	5	3	6	2	4	4	6	3	4	5	5	4	4	3	4	2	0	0	0	2	2	1	3					
39	Jakarta Utara	Koja	2	2	2	1	4	4	4	3	5	5	5	5	5	6	5	5	1	3	4	3	0	0	0	0	0	0	1					
40	Jakarta Utara	Cilincing	2	1	0	0	6	5	5	3	6	6	3	6	6	7	3	6	4	4	3	5	0	0	0	0	0	2	1					
41	Jakarta Utara	Pademangan	1	1	1	0	2	2	2	0	3	3	3	2	3	3	3	2	0	1	2	2	0	0	0	0	0	0	1					
42	Jakarta Utara	Kelapa Gading	0	2	1	1	3	3	2	2	2	3	2	1	2	3	2	1	1	2	2	1	0	0	0	0	0	0	1					
		Total	37	49	38	44	100	116	112	96	109	122	117	114	102	119	111	111	39	50	58	64	2	0	0	138	109	119	113					

Number of Answer

			1-3																																
			If you buy water from the seller or shop (not bottled water) in your daily life, how do you use it?																																
			Multiple Choice																																
No.	Wilayah	Kecamatan	1				2				3				4				5				6				7								
			Drinking				Cooking				Laundry				Bath, toilet				Watering the plants				Selling				Not use								
			L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	
1	Jakarta Barat	Grogol Petamburan	0	0	1	0	2	0	1	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	5	7	5	6
2	Jakarta Barat	Taman Sari	0	0	1	2	1	1	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	4	6	
3	Jakarta Barat	Tambora	2	0	0	1	5	2	0	4	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6	9	11	7		
4	Jakarta Barat	Kebon Jeruk	1	0	0	1	0	0	1	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	6	7	6	6		
5	Jakarta Barat	Palmerah	0	2	1	1	0	2	2	2	0	0	1	1	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	6	3	4	3		
6	Jakarta Barat	Kembangan	0	1	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	6	5			
7	Jakarta Barat	Cengkareng	0	0	0	3	1	0	0	3	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	6	5	3		
8	Jakarta Barat	Kalideres	0	0	2	1	1	1	1	2	2	2	0	1	2	2	0	1	2	2	0	1	0	1	0	0	0	0	0	3	3	3	3		
9	Jakarta Pusat	Gambir	1	0	0	1	1	0	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	6	5	4		
10	Jakarta Pusat	Kemayoran	2	2	0	2	3	1	0	1	1	0	0	1	0	0	0	1	1	0	0	1	1	0	0	1	0	0	0	4	6	8	4		
11	Jakarta Pusat	Senen	0	0	0	2	4	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	6	3			
12	Jakarta Pusat	Cempaka Putih	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	3	1		
13	Jakarta Pusat	Menteng	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	4			
14	Jakarta Pusat	Tanah Abang	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7	7	6	7			
15	Jakarta Pusat	Johar Baru	1	0	2	1	0	1	1	0	0	1	1	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	2	3	3	2			
16	Jakarta Pusat	Sawah Besar	1	1	1	1	2	3	2	0	1	1	1	0	1	1	1	0	0	1	0	0	1	0	0	0	0	0	3	2	2	4			
17	Jakarta Timur	Matraman	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6	6	6	4			
18	Jakarta Timur	Pulo Gadung	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	6	7	7			
19	Jakarta Timur	Cakung	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	6	7	7			
20	Jakarta Timur	Jatinegara	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	8	7	8	8			
21	Jakarta Timur	Kramat	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	6			
22	Jakarta Timur	Pasar Rebo	0	0	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	5	4	5	4			
23	Jakarta Timur	Duren Sawit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	6	5	6	6			
24	Jakarta Timur	Makasar	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	5	4	4			
25	Jakarta Timur	Ciracas	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5	3	5	5			
26	Jakarta Timur	Cipayung	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	7			
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	1			
27	Jakarta Selatan	Tebet	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	6			
28	Jakarta Selatan	Setia Budi	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	7			
29	Jakarta Selatan	Mampang Prapatan	0	1	0	2	0	0	0	2	1	0	0	1	1	0	0	1	1	0	0	0	0	0	1	0	0	0	4	3	5	3			
30	Jakarta Selatan	Pasar Minggu	2	1	1	1	1	1	2	2	2	0	2	3	2	0	1	3	0	0	0	1	0	0	0	0	0	0	3	5	4	3			
31	Jakarta Selatan	Kebayoran Lama	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	6	5	6	4			
32	Jakarta Selatan	Cilandak	0	1	1	1	1	1	0	0	1	0	0	1	1	0	0	1	0	0	1	0	0	1	1	0	0	0	3	4	4	3			
33	Jakarta Selatan	Kebayoran Baru	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	9	9	10	10			
34	Jakarta Selatan	Pancoran	0	1	0	1	0	0	0	1	1	1	0	3	1	1	0	2	0	1	0	1	0	0	0	0	0	0	5	4	6	3			
35	Jakarta Selatan	Jagakarsa	3	2	1	2	1	0	1	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	3	3	5	5			
36	Jakarta Selatan	Pesanggrahan	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	4	5	4			
37	Jakarta Utara	Penjaringan	0	0	0	0	1	2	2	2	2	2	3	2	2	3	2	1	0	3	1	0	0	0	0	0	0	0	3	3	2	3			
38	Jakarta Utara	Tanjung Priok	1	0	2	0	2	2	3	0	2	1	1	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	3	5	4	7			
39	Jakarta Utara	Koja	1	0	0	0	1	2	2	1	1	2	1	1	1	2	2	1	1	1	1	1	1	1	0	0	0	0	4	3	3	5			
40	Jakarta Utara	Cilincing	1	0	0	0	2	0	2	2	2	0	1	2	2	0	1	2	1	0	1	2	1	0	1	1	0	0	5	7	5	4			
41	Jakarta Utara	Pademangan	0	0	0	0	1	1	0	0	2	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3			
42	Jakarta Utara	Kelapa Gading	0	0	0	1	1	0	0	1	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	2	3	2	1			
		Total	17	17	13	30	33	25	24	39	22	14	14	28	23	15	15	22	7	6	8	8	1	4	1	0	0	211	223	230	198				

Number of Answer

			1-4																															
			If you use your private well in your daily life, how do you use it?																															
			Multiple Choice																															
			1				2				3				4				5				6				7							
			Drinking				Cooking				Laundry				Bath, toilet				Watering the plants				Selling				Not use							
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	0	0	0	1	0	1	0	4	4	5	2	6	4	5	2	5	1	1	1	5	0	0	0	0	2	2	4	1				
2	Jakarta Barat	Taman Sari	0	0	0	3	1	2	0	5	5	6	5	5	3	6	5	5	0	2	1	4	0	0	0	0	3	1	2	3				
3	Jakarta Barat	Tambora	0	0	0	1	0	0	0	3	5	2	6	9	6	4	6	9	1	1	3	3	0	0	0	0	5	7	3	2				
4	Jakarta Barat	Kebon Jeruk	2	0	2	2	2	2	5	3	3	5	5	5	3	4	5	5	0	0	2	2	0	0	0	0	4	2	2	2				
5	Jakarta Barat	Palmerah	1	2	1	1	2	2	3	3	2	4	3	4	2	2	3	4	0	2	1	3	0	0	0	1	4	1	2	2				
6	Jakarta Barat	Kembangan	1	2	1	0	4	5	3	3	6	6	5	5	6	6	5	4	2	2	6	2	0	0	0	0	0	0	0	1				
7	Jakarta Barat	Cengkareng	0	0	0	0	0	0	0	0	2	4	1	5	1	3	2	5	2	3	2	3	0	0	0	0	3	2	4	0				
8	Jakarta Barat	Kalideres	0	0	0	1	0	0	0	1	3	4	4	2	3	4	4	2	0	5	4	2	0	0	0	0	2	0	1	3				
9	Jakarta Pusat	Gambir	1	0	0	0	1	2	1	1	2	4	5	3	2	4	4	3	1	3	3	1	0	0	0	0	3	1	1	3				
10	Jakarta Pusat	Kemayoran	0	0	1	1	0	0	1	1	4	6	6	3	5	5	7	1	3	4	4	1	0	0	0	0	3	2	1	3				
11	Jakarta Pusat	Senen	0	0	0	1	1	1	1	2	4	4	3	3	4	5	4	3	2	4	2	2	0	0	0	0	2	1	2	1				
12	Jakarta Pusat	Cempaka Putih	0	0	1	0	0	0	1	0	1	2	2	1	1	1	2	0	1	1	2	0	0	0	0	0	2	1	0	2				
13	Jakarta Pusat	Menteng	0	0	0	0	2	2	3	0	3	2	4	1	3	2	4	0	2	2	3	0	0	0	0	0	2	3	1	4				
14	Jakarta Pusat	Tanah Abang	1	0	0	1	3	3	3	4	3	4	4	5	3	4	4	4	1	1	5	3	0	0	0	0	4	3	1	2				
15	Jakarta Pusat	Johar Baru	0	0	1	0	1	2	3	0	1	2	4	2	1	3	4	2	0	2	1	1	0	0	0	0	2	1	1	0				
16	Jakarta Pusat	Sawah Besar	0	0	0	0	0	0	0	2	4	4	5	4	3	3	4	2	3	3	3	0	0	0	0	1	1	0	1					
17	Jakarta Timur	Matraman	1	4	4	0	1	4	5	1	2	5	5	4	2	5	5	4	2	2	4	3	0	0	0	0	3	1	1	2				
18	Jakarta Timur	Pulo Gadung	0	1	2	0	3	1	3	2	4	3	4	4	4	3	4	5	2	3	3	2	0	0	1	0	3	3	3	2				
19	Jakarta Timur	Cakung	0	0	1	0	1	0	1	1	1	2	1	3	2	2	3	0	1	1	4	0	0	0	0	5	5	5	3					
20	Jakarta Timur	Jatinegara	0	4	1	3	6	6	2	4	6	6	4	4	6	6	4	4	6	2	4	4	0	0	0	0	0	2	4	3				
21	Jakarta Timur	Kramat	4	4	3	3	5	7	5	5	6	7	7	7	6	7	7	7	4	7	3	6	0	0	0	0	0	0	0	0				
22	Jakarta Timur	Pasar Rebo	2	1	3	1	3	4	5	1	3	5	5	4	3	5	5	3	3	4	5	3	0	0	0	0	0	0	0	1				
23	Jakarta Timur	Duren Sawit	3	3	3	1	5	6	5	2	5	6	5	4	5	6	5	5	4	4	3	5	0	0	0	0	1	0	1	1				
24	Jakarta Timur	Makasar	3	1	0	1	2	4	3	4	3	4	4	5	4	4	4	5	4	3	5	4	0	0	0	0	0	1	0	0				
25	Jakarta Timur	Ciracas	3	2	3	3	4	3	3	3	4	4	5	5	3	4	5	5	3	4	4	5	0	0	1	0	0	1	0	0				
26	Jakarta Timur	Cipayung	4	6	4	5	7	8	7	6	8	8	8	7	8	8	8	7	6	6	7	6	1	0	0	0	0	0	0	1				
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	1	0	0	0	2	2	1	1	3	2	2	1	3	3	2	1	2	3	0	1	0	0	0	0	3	3	4	0				
27	Jakarta Selatan	Tebet	2	0	1	1	5	1	3	4	6	3	2	4	6	4	3	4	3	2	3	4	0	0	0	0	1	3	4	2				
28	Jakarta Selatan	Setia Budi	0	0	1	0	5	3	5	1	5	4	5	4	5	4	5	2	4	4	4	2	0	0	0	0	3	3	3	4				
29	Jakarta Selatan	Mampang Prapatan	4	3	1	3	4	3	1	3	5	5	3	4	4	5	1	5	1	4	2	3	0	0	0	0	0	0	2	0				
30	Jakarta Selatan	Pasar Minggu	5	5	6	5	4	6	7	6	7	6	6	7	7	6	6	7	3	5	6	5	0	1	1	0	0	0	0	0				
31	Jakarta Selatan	Kebayoran Lama	6	3	6	4	6	4	6	4	6	4	6	5	6	5	6	6	3	3	6	4	0	0	0	0	0	0	0	0				
32	Jakarta Selatan	Cilandak	3	0	3	3	4	2	4	4	4	4	5	4	5	4	5	4	3	2	4	3	0	0	0	0	0	1	0	0				
33	Jakarta Selatan	Kebayoran Baru	3	4	3	2	8	6	6	7	10	8	9	10	8	9	10	8	4	7	7	10	0	0	0	0	0	0	1	0				
34	Jakarta Selatan	Pancoran	1	2	1	2	5	5	1	4	5	6	1	5	5	6	2	5	3	4	1	4	0	0	0	0	1	0	4	1				
35	Jakarta Selatan	Jagakarsa	1	4	4	5	4	4	4	6	4	5	5	6	4	3	5	6	2	4	5	5	0	0	0	0	2	0	1	0				
36	Jakarta Selatan	Pesanggrahan	1	3	3	0	4	3	5	2	5	2	4	3	4	2	4	4	3	1	4	3	1	0	0	0	0	1	0	1				
37	Jakarta Utara	Penjaringan	0	0	0	0	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0	2	0	0	0	0	4	3	5	3				
38	Jakarta Utara	Tanjung Priok	0	0	0	2	1	1	0	3	4	3	1	4	4	2	2	4	1	1	1	4	0	0	0	0	3	4	5	2				
39	Jakarta Utara	Koja	0	0	0	1	0	0	0	1	2	2	2	1	1	0	2	1	1	2	2	1	0	0	0	0	4	3	4	5				
40	Jakarta Utara	Cilincing	0	0	0	1	1	0	0	1	3	2	5	2	2	1	5	2	0	1	4	2	0	0	0	0	4	5	1	5				
41	Jakarta Utara	Pademangan	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	0	0	0	3	2	3	2				
42	Jakarta Utara	Kelapa Gading	0	0	0	0	0	0	0	1	1	2	1	3	1	1	0	3	1	2	0	3	0	0	0	0	2	1	2	0				
		Total	53	54	60	58	108	106	106	110	165	174	169	175	160	167	169	170	87	118	131	134	2	1	3	1	84	70	78	68				

Number of Answer

			1-5																															
			If you use shared well and/or tap water in your daily life, how do you use it?																															
			Multiple Choice																															
No.	Wilayah	Kecamatan	1				2				3				4				5				6				7							
			Drinking				Cooking				Laundry				Bath, toilet				Watering the plants				Selling				Not use							
			L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	0	0	0	1	0	0	0	1	1	0	0	2	1	0	0	2	0	0	0	2	0	0	0	2	0	0	0	0	6	7	7	5
2	Jakarta Barat	Taman Sari	0	0	0	0	0	0	0	1	0	0	0	2	0	0	1	2	0	0	0	1	0	0	0	0	0	0	0	8	8	7	6	
3	Jakarta Barat	Tambora	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	1	0	0	0	1	0	0	0	10	11	11	10		
4	Jakarta Barat	Kebon Jeruk	1	0	0	0	1	0	0	0	1	1	0	1	1	0	0	1	0	0	0	1	0	0	0	0	0	0	6	6	7	6		
5	Jakarta Barat	Palmerah	2	0	0	0	2	1	0	0	2	1	0	0	2	1	0	0	2	1	0	0	0	0	0	0	0	0	4	5	6	6		
6	Jakarta Barat	Kembangan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	6		
7	Jakarta Barat	Cengkareng	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	5		
8	Jakarta Barat	Kalideres	0	0	0	0	1	0	0	1	2	2	1	2	2	2	1	2	0	2	1	0	0	0	0	0	0	2	3	4	3			
9	Jakarta Pusat	Gambir	0	0	0	0	0	0	0	1	0	1	2	2	0	1	2	0	0	0	2	0	0	0	2	0	0	0	4	5	5	4		
10	Jakarta Pusat	Kemayoran	0	0	0	0	0	0	0	1	1	1	0	2	1	1	0	2	0	1	0	1	0	0	0	0	0	7	7	8	6			
11	Jakarta Pusat	Senen	0	0	0	0	1	0	0	1	0	0	0	1	1	0	2	0	0	0	1	0	0	0	1	0	0	0	4	5	6	3		
12	Jakarta Pusat	Cempaka Putih	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	2	3	3	2			
13	Jakarta Pusat	Menteng	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	4	3	5	4			
14	Jakarta Pusat	Tanah Abang	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6	7	7	7			
15	Jakarta Pusat	Johar Baru	0	0	1	0	1	0	1	0	1	1	0	1	1	0	1	1	0	1	1	0	1	0	0	0	0	2	3	3	3			
16	Jakarta Pusat	Sawah Besar	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	5	4	4	5			
17	Jakarta Timur	Matraman	0	1	0	0	1	1	1	1	1	2	1	3	1	2	1	3	1	0	1	1	0	0	0	0	5	4	5	3				
18	Jakarta Timur	Pulo Gadung	0	1	1	0	0	1	1	1	0	1	1	1	0	1	1	0	0	1	0	0	0	0	0	0	7	6	6	6				
19	Jakarta Timur	Cakung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7				
20	Jakarta Timur	Jatinegara	0	0	0	1	0	1	1	1	0	1	1	1	0	1	1	1	0	0	0	1	0	0	0	1	0	0	8	7	7	7		
21	Jakarta Timur	Kramat	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	6	6	6	6				
22	Jakarta Timur	Pasar Rebo	1	0	0	1	1	0	0	1	0	2	1	2	0	2	1	3	0	2	1	3	0	2	1	1	0	4	3	4	2			
23	Jakarta Timur	Duren Sawit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	6				
24	Jakarta Timur	Makasar	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	1	0	0	1	1	0	0	1	1	0	5	5	4	3			
25	Jakarta Timur	Ciracas	1	0	0	1	0	0	0	1	1	1	0	2	1	1	1	2	1	0	0	2	0	0	0	0	3	4	4	3				
26	Jakarta Timur	Cipayung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	8	8	8	7				
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	1				
27	Jakarta Selatan	Tebet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7				
28	Jakarta Selatan	Setia Budi	0	0	0	1	0	0	0	2	0	0	0	3	1	0	0	3	0	0	0	4	0	0	0	0	7	8	8	4				
29	Jakarta Selatan	Mampang Prapatan	0	1	0	2	1	2	0	2	2	2	0	3	3	2	0	3	1	2	1	3	0	0	0	2	2	4	2	2	2			
30	Jakarta Selatan	Pasar Minggu	1	1	1	1	2	2	2	1	5	3	1	4	3	2	1	4	1	2	1	1	0	0	0	2	3	5	3	3	3			
31	Jakarta Selatan	Kebayoran Lama	0	1	0	0	0	1	0	0	0	3	0	1	0	3	0	2	0	1	0	1	0	0	0	0	6	3	6	4	4			
32	Jakarta Selatan	Cilandak	1	1	1	2	0	0	1	2	1	0	1	3	0	1	1	2	1	0	0	2	0	0	0	0	2	4	4	2	2			
33	Jakarta Selatan	Kebayoran Baru	1	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	2	0	1	0	0	0	7	8	9	9	9	9			
34	Jakarta Selatan	Pancoran	0	0	0	3	2	2	0	3	2	2	0	3	2	2	0	4	2	2	0	3	0	0	0	0	4	4	6	2	2			
35	Jakarta Selatan	Jagakarsa	1	0	0	2	3	0	0	3	2	0	2	4	1	1	2	3	0	0	1	2	0	0	0	3	5	4	3	3	3			
36	Jakarta Selatan	Pesanggrahan	1	0	1	2	1	0	1	1	1	0	2	1	1	0	2	1	1	0	1	1	0	0	0	4	5	3	3	3	3			
37	Jakarta Utara	Penjaringan	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0	0	5	5	4	4	4	4			
38	Jakarta Utara	Tanjung Priok	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	1	0	0	0	0	0	0	6	6	7	7	7	7			
39	Jakarta Utara	Koja	0	0	0	1	1	1	0	1	0	2	0	1	0	1	1	1	0	0	1	1	0	0	0	5	4	5	5	5	5			
40	Jakarta Utara	Cilincing	0	0	0	0	0	0	1	0	1	0	2	0	1	0	2	0	0	0	2	1	0	0	0	6	7	5	6	6	6			
41	Jakarta Utara	Pademangan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3			
42	Jakarta Utara	Kelapa Gading	0	0	0	1	0	0	0	1	1	0	1	2	1	0	0	1	0	0	0	0	0	0	0	2	3	2	1	1	1	1		
		Total	10	6	6	21	18	12	10	27	31	29	19	53	31	29	23	51	15	17	13	39	0	0	0	0	218	228	240	197	197			





Number of Answer

			1-7																																			
			How much does your family use water in a day?																																			
			Single Choice																																			
			1				2				3				4				5				6				7											
			0-100 L/day				101-200 L/day				201-300 L/day				201-300 L/day				401-500 L/day				more than 500 L/day				Unknown											
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K				
1	Jakarta Barat	Grogol Petamburan	1	0	0	0	1	0	0	0	4	2	3	3	1	1	1	2	0	0	0	0	0	4	3	1	0	0	0	0	1							
2	Jakarta Barat	Taman Sari	0	0	0	0	3	1	1	3	2	2	3	2	2	2	2	1	0	2	2	1	1	1	0	1	0	0	0	0	0							
3	Jakarta Barat	Tambora	0	0	0	0	2	3	1	0	4	3	6	5	4	3	2	4	0	0	0	0	1	2	2	1	0	0	0	1								
4	Jakarta Barat	Kebon Jeruk	1	0	0	1	0	0	0	0	3	2	1	2	2	3	5	2	0	1	0	0	1	1	1	2	0	0	0	0	0							
5	Jakarta Barat	Palmerah	0	0	0	1	3	2	0	1	2	2	3	2	0	1	2	1	0	1	0	1	0	0	1	0	1	0	0	0	0							
6	Jakarta Barat	Kembangan	0	0	0	0	0	1	2	1	4	2	0	1	1	0	2	2	0	2	1	0	0	1	1	2	1	0	0	0	0							
7	Jakarta Barat	Cengkareng	1	1	1	1	0	1	2	0	3	3	2	3	1	1	0	0	0	0	1	1	0	1	1	0	1	0	0	0	0							
8	Jakarta Barat	Kalideres	2	0	1	2	0	0	1	1	2	1	2	2	1	0	0	0	0	1	0	0	0	2	1	0	0	1	0	0	0	0						
9	Jakarta Pusat	Gambir	2	1	1	1	2	0	1	1	1	3	1	2	0	1	1	2	0	0	0	0	1	1	2	0	0	0	0	0	0	0						
10	Jakarta Pusat	Kemayoran	2	2	0	1	4	1	2	0	0	3	3	4	0	0	1	0	0	1	0	0	1	1	2	3	1	0	0	0	0	0						
11	Jakarta Pusat	Senen	1	0	1	1	3	1	1	1	0	3	0	2	1	0	0	1	0	0	1	0	0	1	3	1	1	1	0	0	0	0						
12	Jakarta Pusat	Cempaka Putih	1	0	0	2	1	1	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0					
13	Jakarta Pusat	Menteng	0	0	0	0	1	1	0	0	2	2	0	2	1	2	0	1	1	0	0	1	0	0	5	1	0	0	0	0	0	0	0					
14	Jakarta Pusat	Tanah Abang	0	0	0	0	2	1	0	1	3	1	2	0	1	1	0	1	0	0	2	1	1	4	1	4	0	0	2	0	0	0	0					
15	Jakarta Pusat	Johar Baru	1	2	1	1	0	2	1	1	1	0	1	1	0	0	1	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0					
16	Jakarta Pusat	Sawah Besar	0	0	0	0	0	0	0	1	0	1	1	1	1	1	2	1	4	3	1	1	0	0	1	1	0	0	0	0	0	0	0	0				
17	Jakarta Timur	Matraman	0	0	0	1	1	0	0	0	1	2	2	2	1	1	1	0	1	0	2	1	2	3	1	2	0	0	0	0	0	0	0	0				
18	Jakarta Timur	Pulo Gadung	0	1	0	0	2	2	0	2	2	3	2	0	0	0	2	2	2	0	1	2	1	1	2	1	0	0	0	0	0	0	0	0				
19	Jakarta Timur	Cakung	1	0	0	2	2	4	1	1	1	1	3	2	0	0	1	0	0	1	0	0	1	0	2	2	1	0	0	0	0	0	0	0				
20	Jakarta Timur	Jatinegara	1	3	1	1	2	3	2	0	2	1	3	3	1	0	0	2	1	0	0	1	1	0	0	1	0	0	1	2	0	1	2	0				
21	Jakarta Timur	Kramat	0	0	0	1	1	1	0	0	2	2	1	2	2	0	0	1	1	2	3	1	0	1	2	1	1	1	1	1	1	1	1	1				
22	Jakarta Timur	Pasar Rebo	0	0	0	1	0	0	0	0	2	1	0	0	0	0	1	0	1	0	2	1	1	3	1	0	1	1	1	3	1	1	3	0				
23	Jakarta Timur	Duren Sawit	0	1	2	3	2	0	2	1	1	3	0	0	3	2	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	2	0				
24	Jakarta Timur	Makasar	3	2	0	0	1	0	0	1	0	1	0	1	0	0	3	2	1	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0			
25	Jakarta Timur	Ciracas	1	1	1	0	2	2	1	2	1	0	1	2	0	0	0	0	1	0	1	0	0	1	1	1	0	1	0	0	0	0	0	0	0			
26	Jakarta Timur	Cipayung	0	0	2	1	3	1	1	2	4	0	4	0	1	2	0	0	0	3	0	1	0	1	1	3	0	1	0	1	1	3	0	1	0	1		
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	2	0	1	0	1	1	1	0	2	1	0	2	1	0	0	0	1	2	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0		
27	Jakarta Selatan	Tebet	0	0	0	0	0	0	1	0	5	2	0	1	1	1	2	4	1	3	0	1	0	0	4	0	0	1	0	1	0	1	0	1	0	1		
28	Jakarta Selatan	Setia Budi	0	0	1	0	2	0	0	0	0	1	0	0	1	0	1	1	3	3	2	3	2	4	4	4	0	0	0	0	0	0	0	0	0	0		
29	Jakarta Selatan	Mampang Prapatan	1	1	0	0	1	1	0	0	2	0	0	0	2	0	0	1	1	0	3	1	0	0	2	1	0	1	0	1	0	2	0	1	0	2		
30	Jakarta Selatan	Pasar Minggu	2	0	0	0	1	0	0	0	0	0	1	1	2	0	0	1	1	3	2	0	1	4	4	2	0	0	0	0	0	0	0	0	0	0	3	
31	Jakarta Selatan	Kebayoran Lama	0	1	0	1	1	0	0	1	1	0	0	0	2	1	2	1	0	0	0	0	2	3	3	2	0	1	1	1	1	1	1	1	1	1		
32	Jakarta Selatan	Cilandak	0	0	0	0	0	1	1	0	2	1	2	1	1	1	1	2	0	0	1	1	1	1	0	1	1	1	0	1	1	1	0	0	0	0		
33	Jakarta Selatan	Kebayoran Baru	0	0	0	0	5	1	0	1	2	3	2	2	0	2	0	1	0	0	2	0	2	3	6	5	1	1	0	1	0	1	0	1	0	1		
34	Jakarta Selatan	Pancoran	1	1	0	0	1	0	1	0	0	0	2	1	0	0	1	0	0	1	0	0	1	3	2	3	3	1	0	0	2	0	1	0	2	0	2	
35	Jakarta Selatan	Jagakarsa	0	1	0	0	0	0	0	1	3	0	1	0	2	2	1	0	0	1	0	0	0	2	2	3	1	0	2	2	0	1	0	2	2	2	2	
36	Jakarta Selatan	Pesanggrahan	1	0	0	0	0	1	0	1	2	2	0	2	0	0	1	0	0	1	0	0	1	1	1	1	1	0	3	1	1	0	3	1	0	3	1	
37	Jakarta Utara	Penjaringan	0	0	0	0	2	0	1	1	1	4	1	0	2	1	0	0	0	0	0	1	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	
38	Jakarta Utara	Tanjung Priok	0	0	0	0	2	0	0	0	0	1	1	3	2	2	1	0	0	1	1	1	2	3	4	3	1	0	0	0	0	0	0	0	0	0	0	
39	Jakarta Utara	Koja	0	0	0	0	0	1	1	1	2	1	0	2	1	2	0	0	2	0	1	2	1	2	4	1	0	0	0	0	0	0	0	0	0	0	0	0
40	Jakarta Utara	Cilincing	0	0	1	0	2	2	0	1	2	0	2	2	0	3	0	1	0	1	2	0	3	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0
41	Jakarta Utara	Pademangan	0	0	0	0	0	0	1	0	0	1	0	1	0	1	0	1	0	1	1	0	0	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0
42	Jakarta Utara	Kelapa Gading	0	0	0	1	0	0	1	0	1	0	0	2	0	0	0	0	1	3	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			25	18	14	23	56	36	27	28	70	63	58	63	41	39	38	38	23	36	32	24	33	60	82	65	18	14	15	20	0	0	0	0	0	0	0	

Number of Answer			1-8																								
			How much does your family pay a water tariff in a month (Rp/month/household)?																								
			Single Choice																								
			1					2					3					4					5				
			Less than Rp. 20,000					Rp. 20,001 – Rp. 30,000					Rp. 30,001 – Rp. 40,000					Rp. 40,001 – Rp. 50,000					More than Rp. 50,001				
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K					
1	Jakarta Barat	Grogol Petamburan	3	1	1	3	1	3	0	0	0	1	0	0	1	0	0	0	1	2	2	6	3				
2	Jakarta Barat	Taman Sari	0	0	3	3	0	1	0	0	1	1	2	0	1	0	0	0	6	6	3	5					
3	Jakarta Barat	Tambora	1	1	2	5	2	0	1	2	2	1	0	0	1	0	2	1	5	9	6	3					
4	Jakarta Barat	Kebon Jeruk	3	4	3	2	0	0	0	0	0	0	0	0	1	0	0	0	3	3	4	5					
5	Jakarta Barat	Palmerah	4	2	3	3	2	0	0	2	0	2	0	0	0	0	0	1	0	2	3	0					
6	Jakarta Barat	Kembangan	6	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1					
7	Jakarta Barat	Cengkareng	1	0	2	1	0	2	0	2	0	0	1	0	1	1	0	0	4	3	3	3					
8	Jakarta Barat	Kalideres	3	1	1	1	0	0	1	2	0	0	0	0	1	0	1	1	2	3	2	1					
9	Jakarta Pusat	Gambir	1	0	2	2	0	1	1	0	0	0	0	0	1	1	2	0	4	4	1	4					
10	Jakarta Pusat	Kemayoran	3	0	2	1	0	0	1	1	1	4	1	2	2	0	0	0	2	4	4	4					
11	Jakarta Pusat	Senen	1	2	0	1	1	0	2	0	1	0	1	2	0	1	0	1	3	3	3	2					
12	Jakarta Pusat	Cempaka Putih	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2	2	2	2					
13	Jakarta Pusat	Menteng	2	1	2	0	0	0	0	1	0	0	0	0	1	0	0	0	2	4	3	4					
14	Jakarta Pusat	Tanah Abang	3	3	1	4	0	0	0	0	0	0	0	0	0	2	0	0	4	2	6	3					
15	Jakarta Pusat	Johar Baru	1	0	0	0	0	0	1	0	0	0	0	0	1	0	1	3	3	3	3						
16	Jakarta Pusat	Sawah Besar	2	2	0	1	1	0	2	0	0	0	1	1	0	1	0	1	2	2	2	2					
17	Jakarta Timur	Matraman	4	3	4	4	0	1	1	0	0	0	0	0	0	1	0	0	2	1	1	2					
18	Jakarta Timur	Pulo Gadung	3	2	4	3	0	0	0	0	1	0	1	1	0	0	0	0	3	5	2	3					
19	Jakarta Timur	Cakung	2	2	1	3	0	1	0	0	1	1	0	0	1	0	0	1	3	3	6	3					
20	Jakarta Timur	Jatinegara	5	7	4	2	0	1	1	1	0	0	0	2	1	0	0	1	2	0	3	2					
21	Jakarta Timur	Kramat	7	7	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1					
22	Jakarta Timur	Pasar Rebo	5	3	5	4	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1						
23	Jakarta Timur	Duren Sawit	5	4	4	1	0	0	0	0	0	0	0	2	1	0	1	0	2	1	2						
24	Jakarta Timur	Makasar	4	3	4	4	0	0	0	0	0	0	0	1	0	0	0	0	1	2	1	0					
25	Jakarta Timur	Ciracas	4	2	5	3	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0	2					
26	Jakarta Timur	Cipayung	8	8	8	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1					
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	4	1	1	1	0	1	0	0	0	0	1	0	1	1	0	0	1	3	4	0					
27	Jakarta Selatan	Tebet	6	1	2	3	0	0	0	0	0	0	1	0	0	0	0	0	1	6	4	4					
28	Jakarta Selatan	Setia Budi	5	5	4	3	0	0	0	0	0	0	0	0	0	0	0	0	3	3	4	5					
29	Jakarta Selatan	Mampang Prapatan	4	5	4	5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0					
30	Jakarta Selatan	Pasar Minggu	6	7	5	5	1	0	0	1	0	0	1	0	0	0	0	0	0	0	1	1					
31	Jakarta Selatan	Kebayoran Lama	5	3	5	4	0	0	0	1	1	0	0	0	0	1	0	0	0	2	1	1					
32	Jakarta Selatan	Cilandak	5	3	4	3	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	2					
33	Jakarta Selatan	Kebayoran Baru	7	7	9	9	0	0	0	0	0	0	0	0	2	1	0	0	1	2	1	1					
34	Jakarta Selatan	Pancoran	5	5	1	2	0	0	0	1	1	0	0	0	0	1	0	2	0	2	5	1					
35	Jakarta Selatan	Jagakarsa	6	5	4	6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0					
36	Jakarta Selatan	Pesanggrahan	5	5	4	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0					
37	Jakarta Utara	Penjaringan	1	0	0	2	1	0	0	1	0	0	0	0	0	0	0	0	3	5	5	2					
38	Jakarta Utara	Tanjung Priok	2	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	5	5	6	4					
39	Jakarta Utara	Koja	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0	5	4	6	5					
40	Jakarta Utara	Cilincing	0	1	3	1	0	0	0	0	1	0	1	1	0	1	1	0	6	5	2	5					
41	Jakarta Utara	Pademangan	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	3	3	2	2					
42	Jakarta Utara	Kelapa Gading	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	1	3	3	0					
		Total	143	114	119	125	9	12	13	15	11	13	13	13	19	16	7	13	84	111	114	95					

Number of Answer			2-1							
			Do you have your private toilet?							
			Single Choice							
			1				2			
			Yes				No			
			L	M	H	K	L	M	H	K
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	7	7	7	7	0	0	0	0
2	Jakarta Barat	Taman Sari	7	8	8	8	1	0	0	0
3	Jakarta Barat	Tambora	9	11	11	11	2	0	0	0
4	Jakarta Barat	Kebon Jeruk	7	7	7	7	0	0	0	0
5	Jakarta Barat	Palmerah	5	6	6	6	1	0	0	0
6	Jakarta Barat	Kembangan	5	6	6	6	1	0	0	0
7	Jakarta Barat	Cengkareng	5	6	6	6	1	0	0	0
8	Jakarta Barat	Kalideres	4	5	5	5	1	0	0	0
9	Jakarta Pusat	Gambir	4	6	6	6	2	0	0	0
10	Jakarta Pusat	Kemayoran	6	8	8	8	2	0	0	0
11	Jakarta Pusat	Senen	3	6	6	6	3	0	0	0
12	Jakarta Pusat	Cempaka Putih	3	3	3	3	0	0	0	0
13	Jakarta Pusat	Menteng	5	5	5	5	0	0	0	0
14	Jakarta Pusat	Tanah Abang	5	6	7	7	2	1	0	0
15	Jakarta Pusat	Johar Baru	3	4	4	4	1	0	0	0
16	Jakarta Pusat	Sawah Besar	5	5	5	5	0	0	0	0
17	Jakarta Timur	Matraman	6	5	6	6	0	1	0	0
18	Jakarta Timur	Pulo Gadung	6	7	7	7	1	0	0	0
19	Jakarta Timur	Cakung	7	7	7	7	0	0	0	0
20	Jakarta Timur	Jatinegara	8	8	8	8	0	0	0	0
21	Jakarta Timur	Kramat	7	6	7	7	0	1	0	0
22	Jakarta Timur	Pasar Rebo	5	5	5	5	0	0	0	0
23	Jakarta Timur	Duren Sawit	6	6	6	6	0	0	0	0
24	Jakarta Timur	Makasar	5	5	5	5	0	0	0	0
25	Jakarta Timur	Ciracas	5	5	5	5	0	0	0	0
26	Jakarta Timur	Cipayung	8	8	8	8	0	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	6	6	6	6	1	0	0	0
27	Jakarta Selatan	Tebet	7	7	7	7	0	0	0	0
28	Jakarta Selatan	Setia Budi	7	8	8	8	1	0	0	0
29	Jakarta Selatan	Mampang Prapatan	5	5	5	5	0	0	0	0
30	Jakarta Selatan	Pasar Minggu	7	7	7	7	0	0	0	0
31	Jakarta Selatan	Kebayoran Lama	6	6	6	6	0	0	0	0
32	Jakarta Selatan	Cilandak	5	5	5	5	0	0	0	0
33	Jakarta Selatan	Kebayoran Baru	10	10	9	10	0	0	1	0
34	Jakarta Selatan	Pancoran	6	6	6	6	0	0	0	0
35	Jakarta Selatan	Jagakarsa	6	6	6	6	0	0	0	0
36	Jakarta Selatan	Pesanggrahan	5	4	5	5	0	1	0	0
37	Jakarta Utara	Penjaringan	5	5	5	5	0	0	0	0
38	Jakarta Utara	Tanjung Priok	5	7	7	7	2	0	0	0
39	Jakarta Utara	Koja	6	6	6	6	0	0	0	0
40	Jakarta Utara	Cilincing	7	7	7	7	0	0	0	0
41	Jakarta Utara	Pademangan	3	3	3	3	0	0	0	0
42	Jakarta Utara	Kelapa Gading	3	3	3	3	0	0	0	0
Total			245	262	265	261	21	4	1	0

Number of Answer

2-1-1																											
Where is your private toilet (for only respondents answering as Yes in 2-1)?																											
Single Choice																											
1 2 3 4 5 6 7																											
In the house In front of the house In the backyard Next to the house Place within 10m from the house Place more than 10m from the house Others																											
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	
1	Jakarta Barat	Grogol Petamburan	7	7	6	7	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2	Jakarta Barat	Taman Sari	7	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Jakarta Barat	Tambora	9	11	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Jakarta Barat	Kebon Jeruk	6	7	7	7	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Jakarta Barat	Palmerah	3	5	6	5	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0
6	Jakarta Barat	Kembangan	5	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Jakarta Barat	Cengkareng	5	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Jakarta Barat	Kalideres	4	4	4	5	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Jakarta Pusat	Gambir	4	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Jakarta Pusat	Kemayoran	5	8	7	7	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Jakarta Pusat	Senen	3	4	4	6	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0
12	Jakarta Pusat	Cempaka Putih	2	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
13	Jakarta Pusat	Menteng	5	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Jakarta Pusat	Tanah Abang	5	6	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Jakarta Pusat	Johar Baru	2	3	4	4	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Jakarta Pusat	Sawah Besar	5	4	5	4	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Jakarta Timur	Matraman	6	5	5	6	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Jakarta Timur	Pulo Gadung	5	7	7	6	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Jakarta Timur	Cakung	6	7	7	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Jakarta Timur	Jatinegara	8	7	8	6	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
21	Jakarta Timur	Kramat	5	5	7	5	0	0	0	0	2	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0
22	Jakarta Timur	Pasar Rebo	3	5	5	4	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Jakarta Timur	Duren Sawit	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Jakarta Timur	Makasar	4	4	4	5	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
25	Jakarta Timur	Ciracas	4	5	5	3	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
26	Jakarta Timur	Cipayung	7	6	8	7	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	6	6	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Jakarta Selatan	Tebet	6	7	6	7	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Jakarta Selatan	Setia Budi	7	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Jakarta Selatan	Mampang Prapatan	3	5	5	4	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
30	Jakarta Selatan	Pasar Minggu	6	6	7	7	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Jakarta Selatan	Kebayoran Lama	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Jakarta Selatan	Cilandak	5	4	4	5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Jakarta Selatan	Kebayoran Baru	9	10	9	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	Jakarta Selatan	Pancoran	6	5	5	6	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Jakarta Selatan	Jagakarsa	5	5	5	6	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
36	Jakarta Selatan	Pesanggrahan	4	4	4	5	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Jakarta Utara	Penjaringan	5	4	5	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	Jakarta Utara	Tanjung Priok	4	6	7	7	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	Jakarta Utara	Koja	5	5	6	6	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
40	Jakarta Utara	Cilincing	6	6	7	7	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	Jakarta Utara	Pademangan	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	Jakarta Utara	Kelapa Gading	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			220	243	253	248	3	2	3	2	17	9	5	8	2	3	2	0	2	2	1	0	1	3	1	2	0

Number of Answer

		2-1-2																																							
		Where is the final destination from your private toilet (for only respondents answering as Yes in 2-1)?																																							
		Single Choice																																							
		1				2				3				4				5				6				7				8				9							
		Septic Tank				Pit Latrine				Open channel				Sewage pipe				Pond				Water basin				Modified septic tank				others				Unknown							
No.	Wilayah	Kecamatan																																							
		L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	6	6	7	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
2	Jakarta Barat	Taman Sari	4	5	7	8	0	0	0	0	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
3	Jakarta Barat	Tambora	9	10	11	10	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4	Jakarta Barat	Kebon Jeruk	6	5	6	7	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5	Jakarta Barat	Palmerah	5	5	6	6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6	Jakarta Barat	Kembangan	5	5	6	6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7	Jakarta Barat	Cengkareng	3	4	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8	Jakarta Barat	Kalideres	3	5	4	5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9	Jakarta Pusat	Gambir	4	5	3	4	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
10	Jakarta Pusat	Kemayoran	5	8	7	5	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
11	Jakarta Pusat	Senen	3	6	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
12	Jakarta Pusat	Cempaka Putih	3	3	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
13	Jakarta Pusat	Menteng	5	3	4	5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
14	Jakarta Pusat	Tanah Abang	4	3	4	5	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
15	Jakarta Pusat	Johar Baru	1	3	3	4	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
16	Jakarta Pusat	Sawah Besar	3	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
17	Jakarta Timur	Matraman	4	3	6	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
18	Jakarta Timur	Pulo Gadung	4	5	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
19	Jakarta Timur	Cakung	7	7	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
20	Jakarta Timur	Jatinegara	7	6	7	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
21	Jakarta Timur	Kramat	6	4	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
22	Jakarta Timur	Pasar Rebo	5	5	4	5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
23	Jakarta Timur	Duren Sawit	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
24	Jakarta Timur	Makasar	5	4	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
25	Jakarta Timur	Ciracas	5	4	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
26	Jakarta Timur	Cipayang	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	1	0	1	1	0	0	0	0	0	0	0	0	5	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
27	Jakarta Selatan	Tebet	7	7	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
28	Jakarta Selatan	Setia Budi	4	8	8	8	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
29	Jakarta Selatan	Mampang Prapatan	3	5	5	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
30	Jakarta Selatan	Pasar Minggu	6	6	7	7	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
31	Jakarta Selatan	Kebayoran Lama	6	5	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
32	Jakarta Selatan	Cilandak	5	3	5	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
33	Jakarta Selatan	Kebayoran Baru	9	8	8	10	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
34	Jakarta Selatan	Pancoran	5	6	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
35	Jakarta Selatan	Jagakarsa	5	6	5	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
36	Jakarta Selatan	Pesanggrahan	4	3	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
37	Jakarta Utara	Penjaringan	5	5	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
38	Jakarta Utara	Tanjung Priok	4	5	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
39	Jakarta Utara	Koja	3	4	3	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
40	Jakarta Utara	Cilincing	5	5	6	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
41	Jakarta Utara	Pademangan	3	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
42	Jakarta Utara	Kelapa Gading	3	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total			204	209	225	229	2	2	2	2	6	11	3	3	9	7	8	1	0	0	1	0	14	15	2	4	10	17	24	22	0	0	0	0	0	0	0	0			

Number of Answer

		2-1-3																																
		How often do you remove the sewage sludge (for only respondents answering as Yes in 2-1)?																																
		Single Choice																																
		1				2				3				4				5				6				7								
		More than 1 time in a year				1 time in a year				1 time in two years				1 time in three years				1 time in more than four years				Never remove the sludge				Unknown								
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	1	1	1	0	1	0	1	0	0	2	0	0	0	0	1	3	1	1	1	0	4	3	3	3	0	0	0	0	1			
2	Jakarta Barat	Taman Sari	1	2	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	1	2	6	4	4	5	0	0	1	1	1				
3	Jakarta Barat	Tambora	2	3	0	1	3	2	0	1	0	1	3	0	0	1	1	1	0	1	2	3	5	6	5	0	0	0	1	1				
4	Jakarta Barat	Kebon Jeruk	1	1	0	0	0	0	0	1	0	0	1	1	0	0	2	0	0	0	3	1	6	3	1	2	0	3	0	2	2			
5	Jakarta Barat	Palmerah	1	1	0	1	1	1	0	0	0	1	0	0	1	1	0	0	2	0	4	3	1	4	1	0	0	0	0	0	0			
6	Jakarta Barat	Kembangan	0	0	0	0	1	1	1	2	0	1	0	0	0	0	1	0	0	0	1	0	4	4	3	4	0	0	0	0	0			
7	Jakarta Barat	Cengkareng	0	0	0	0	0	2	1	2	1	1	1	1	0	0	1	0	0	1	1	0	3	2	2	3	1	0	0	0	0			
8	Jakarta Barat	Kalderes	0	1	0	0	0	1	1	2	1	1	0	1	0	0	3	0	1	0	1	1	2	1	0	0	0	1	0	1	0	1		
9	Jakarta Pusat	Gambir	0	1	0	1	0	1	1	2	2	3	0	0	0	1	2	1	1	0	0	2	0	0	3	0	1	0	0	0	0			
10	Jakarta Pusat	Kenayoran	1	0	0	0	1	1	1	0	1	1	0	1	0	1	1	3	1	1	3	0	0	3	0	2	2	1	3	2	2			
11	Jakarta Pusat	Senen	0	0	0	0	1	2	3	1	0	1	0	0	1	1	1	0	1	1	1	0	0	0	1	2	1	1	2	1	2			
12	Jakarta Pusat	Cempaka Putih	1	0	0	1	1	0	1	0	1	0	1	1	0	0	0	0	2	1	0	0	1	0	0	1	0	0	0	0	1	1		
13	Jakarta Pusat	Menteng	0	0	1	1	0	0	0	2	0	1	0	0	2	0	0	0	0	2	1	2	2	2	3	0	1	0	0	0	0			
14	Jakarta Pusat	Tanah Abang	0	1	0	0	0	0	1	1	1	1	1	1	0	0	1	1	0	0	1	0	1	3	3	4	3	1	0	0	0	0		
15	Jakarta Pusat	Johar Baru	0	1	0	1	1	1	1	0	0	0	1	0	0	0	1	0	0	0	2	1	0	1	0	1	2	1	0	0	0	0		
16	Jakarta Pusat	Sawah Besar	0	0	0	1	1	0	2	1	0	0	0	0	0	0	1	0	0	2	1	0	2	3	3	1	0	1	0	0	1	1		
17	Jakarta Timur	Matraman	1	0	0	1	1	1	0	0	2	0	2	1	0	0	1	0	0	2	2	1	2	2	1	3	0	0	0	0	0	0		
18	Jakarta Timur	Pulo Gadung	1	0	2	2	1	2	2	0	2	0	1	1	0	1	1	0	0	1	0	2	2	1	0	2	0	2	1	0	0	0		
19	Jakarta Timur	Cakung	0	1	0	1	2	0	1	0	2	0	0	0	0	1	2	1	1	3	4	2	4	2	0	0	1	0	0	0	0	0		
20	Jakarta Timur	Jatinegara	0	1	0	0	1	2	0	3	1	1	3	0	0	0	0	1	1	1	1	2	5	3	3	1	0	0	1	1	1			
21	Jakarta Timur	Kramat	1	0	0	0	0	0	0	2	0	0	1	0	0	1	1	0	0	1	1	1	6	4	3	4	0	0	1	0	0	0		
22	Jakarta Timur	Pasar Rebo	0	1	0	0	1	0	1	0	1	2	1	0	0	0	2	2	1	2	0	2	2	0	1	1	0	0	0	0	0	0		
23	Jakarta Timur	Duren Sawit	0	0	0	1	0	0	1	2	0	1	0	0	0	1	0	4	3	2	2	1	2	2	1	1	1	0	0	0	0	0		
24	Jakarta Timur	Makasar	0	0	0	0	1	1	0	0	0	1	0	0	1	1	0	1	0	0	4	3	2	2	1	1	1	0	0	0	0	0		
25	Jakarta Timur	Ciracas	0	1	0	0	1	0	0	1	0	0	2	0	0	0	1	0	2	3	1	2	1	1	1	2	1	0	0	0	0	0		
26	Jakarta Timur	Cipayung	1	0	1	0	0	0	1	2	3	1	0	1	1	1	0	0	0	2	2	0	3	4	4	5	0	0	0	0	0	0		
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	5	6	5	0	0	0	0	0	0	0	0		
27	Jakarta Selatan	Tebet	2	0	0	0	2	0	0	1	1	2	2	0	0	3	1	1	2	0	0	1	0	2	4	3	0	0	0	0	1	1		
28	Jakarta Selatan	Setia Budi	0	1	1	1	1	0	1	1	0	2	2	0	1	1	0	2	1	2	3	2	4	2	1	2	0	0	0	0	0	0		
29	Jakarta Selatan	Mampang Prapatan	2	1	0	1	1	0	0	1	0	0	0	0	1	0	0	0	0	1	0	2	3	4	2	0	0	0	0	1	1	1		
30	Jakarta Selatan	Pasar Minggu	1	1	2	0	1	1	0	0	1	0	1	1	0	0	1	3	1	0	0	1	4	4	2	0	0	0	0	3	3	3		
31	Jakarta Selatan	Kebayoran Lama	2	1	2	2	1	0	1	1	0	1	0	0	0	0	0	1	2	0	0	2	2	2	2	0	0	1	1	1	1	1		
32	Jakarta Selatan	Cilandak	0	0	0	1	0	0	0	2	1	0	1	1	0	0	1	0	1	1	1	2	3	1	0	1	2	1	0	0	0	0		
33	Jakarta Selatan	Kebayoran Baru	0	2	1	1	1	2	3	2	1	1	0	0	1	1	0	0	0	1	0	6	2	4	7	1	2	0	0	0	0	0		
34	Jakarta Selatan	Pancoran	0	0	0	0	1	1	1	2	0	0	1	2	0	0	1	0	1	2	0	2	3	3	3	0	1	0	0	0	0	0		
35	Jakarta Selatan	Jagakarsa	1	0	0	0	0	1	0	0	0	0	1	0	0	2	0	1	0	1	1	3	5	2	4	1	0	0	0	1	1	1		
36	Jakarta Selatan	Pesanggrahan	0	0	1	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	1	0	5	4	1	2	0	0	1	0	0	0		
37	Jakarta Utara	Penjaringan	0	0	0	0	0	0	0	2	0	1	0	0	0	1	0	0	1	0	2	0	3	2	3	2	1	1	0	0	1	1		
38	Jakarta Utara	Tanjung Priok	0	1	0	0	0	1	2	1	0	2	0	0	0	0	0	0	1	0	3	2	4	3	2	4	0	0	0	0	0	0		
39	Jakarta Utara	Koja	2	1	0	0	0	2	1	2	1	1	3	0	0	0	0	0	0	1	1	3	2	1	3	0	0	0	0	0	0	0		
40	Jakarta Utara	Cilincing	0	1	0	1	0	0	0	2	0	1	2	1	0	1	0	0	3	2	1	1	4	2	4	2	0	0	0	0	0	0	0	
41	Jakarta Utara	Pademangan	0	0	1	0	0	0	0	0	0	1	0	1	2	0	1	0	0	1	1	1	1	1	0	1	0	0	0	0	0	0	0	
42	Jakarta Utara	Kelapa Gading	0	0	0	0	1	1	0	2	1	1	0	0	0	1	0	0	1	0	2	0	0	0	1	1	0	0	0	0	0	0	0	
Total			22	25	13	19	28	28	30	45	24	32	33	17	9	19	29	22	29	40	52	53	114	101	96	84	19	17	12	21	21			

Number of Answer

			2-1-4																
			How do you remove the sewage sludge (for only respondents answering as Yes in 2-1)?																
			Single Choice																
			1				2				3				4				
			Call a private company				Call a cleaning person				Remove by myself or my family				Call a public agency (such as DKI Jakarta, PD PAL. JAYA, etc.)				
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	
1	Jakarta Barat	Grogol Petamburan	5	6	4	5	1	0	0	0	0	0	0	0	1	1	3	2	
2	Jakarta Barat	Taman Sari	3	6	4	4	0	0	0	0	3	1	2	0	1	1	2	4	
3	Jakarta Barat	Tambora	5	7	6	7	0	1	1	0	0	1	0	1	4	2	4	3	
4	Jakarta Barat	Kebon Jeruk	3	4	3	4	2	0	0	1	1	0	0	0	1	3	4	2	
5	Jakarta Barat	Palmerah	2	4	6	0	1	0	0	4	1	0	0	0	1	2	0	2	
6	Jakarta Barat	Kembangan	3	4	5	2	1	1	1	1	0	1	0	0	1	0	0	3	
7	Jakarta Barat	Cengkareng	3	5	5	1	0	1	0	1	1	0	0	0	1	0	1	4	
8	Jakarta Barat	Kalideres	2	1	0	2	0	0	1	2	0	0	0	0	2	4	4	1	
9	Jakarta Pusat	Gambir	0	0	5	0	0	0	0	0	0	0	0	0	4	6	1	6	
10	Jakarta Pusat	Kemayoran	3	6	5	1	0	0	0	2	0	0	0	2	3	2	3	3	
11	Jakarta Pusat	Senen	2	4	4	0	0	0	0	1	1	0	0	0	0	2	2	5	
12	Jakarta Pusat	Cempaka Putih	2	1	1	0	0	0	0	2	0	0	1	0	1	2	1	1	
13	Jakarta Pusat	Menteng	1	3	3	4	0	0	0	0	0	0	0	0	4	2	2	1	
14	Jakarta Pusat	Tanah Abang	4	3	6	3	0	0	0	1	0	0	0	0	1	3	1	3	
15	Jakarta Pusat	Johar Baru	0	1	1	1	0	1	0	1	1	0	0	0	2	2	3	2	
16	Jakarta Pusat	Sawah Besar	2	1	3	4	0	0	1	1	0	2	0	0	3	2	1	0	
17	Jakarta Timur	Matraman	1	1	3	0	1	0	0	0	1	0	0	0	2	3	4	3	4
18	Jakarta Timur	Pulo Gadung	1	3	1	1	1	1	2	1	1	0	0	0	3	3	4	5	
19	Jakarta Timur	Cakung	4	5	4	3	1	1	0	0	0	0	0	0	2	1	3	4	
20	Jakarta Timur	Jatinegara	2	1	2	0	0	1	0	0	2	1	1	0	4	5	5	8	
21	Jakarta Timur	Kramat	2	2	3	3	0	0	0	0	2	1	0	0	3	3	4	4	
22	Jakarta Timur	Pasar Rebo	2	3	2	3	1	1	0	1	0	0	0	0	2	1	3	1	
23	Jakarta Timur	Duren Sawit	3	5	3	2	0	0	0	0	0	0	0	0	3	1	3	4	
24	Jakarta Timur	Makasar	0	1	0	0	2	1	1	1	0	1	0	0	3	2	4	4	
25	Jakarta Timur	Ciracas	0	1	1	0	1	0	0	2	0	0	0	0	4	4	4	3	
26	Jakarta Timur	Cipayung	4	5	4	1	0	1	0	1	1	0	0	0	3	2	4	6	
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	0	0	1	0	1	0	5	6	5	1	
27	Jakarta Selatan	Tebet	2	3	4	3	0	1	0	0	0	0	0	0	5	3	3	4	
28	Jakarta Selatan	Setia Budi	7	5	7	2	0	0	0	1	0	0	0	0	0	3	1	5	
29	Jakarta Selatan	Mampang Prapatan	3	2	3	0	1	1	1	3	1	0	0	0	0	2	1	2	
30	Jakarta Selatan	Pasar Minggu	2	3	5	1	0	1	0	1	0	1	0	0	5	2	2	5	
31	Jakarta Selatan	Kebayoran Lama	5	4	6	5	0	2	0	0	0	0	0	0	1	0	0	1	
32	Jakarta Selatan	Cilandak	4	3	3	2	0	0	1	2	0	0	0	0	1	2	1	1	
33	Jakarta Selatan	Kebayoran Baru	8	7	8	7	2	3	1	1	0	0	0	0	0	0	0	2	
34	Jakarta Selatan	Pancoran	2	2	4	0	0	0	1	0	0	1	0	0	4	3	1	6	
35	Jakarta Selatan	Jagakarsa	3	4	4	1	2	0	0	1	0	0	0	0	1	2	2	4	
36	Jakarta Selatan	Pesanggrahan	3	2	4	2	1	0	1	2	1	0	0	0	0	2	0	1	
37	Jakarta Utara	Penjaringan	3	2	4	3	2	2	0	0	0	0	0	0	1	1	2		
38	Jakarta Utara	Tanjung Priok	3	3	5	3	1	0	0	0	0	0	0	0	1	4	2	4	
39	Jakarta Utara	Koja	1	1	3	2	1	1	0	2	0	1	0	0	4	3	3	2	
40	Jakarta Utara	Cilincing	5	3	3	3	1	1	0	0	0	0	1	0	1	3	3	4	
41	Jakarta Utara	Pademangan	2	3	3	1	0	0	0	0	0	0	0	0	1	0	0	2	
42	Jakarta Utara	Kelapa Gading	0	0	1	0	0	0	0	0	0	1	0	0	3	2	2	3	
Total			112	130	151	86	23	22	12	36	18	12	6	5	92	98	96	134	



Number of Answer

			2-1-5																				
			Do you know the importance to remove the sewage sludge and how do you think about it (for only respondents answering as Yes in 2-1)?																				
			Single Choice																				
			1				2				3				4				5				
			I know and I think it is necessary				I do not know, but I think it is necessary.				I know, but I do not think it is necessary				I do not know, and I do not think it is necessary				I have no idea				
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	
1	Jakarta Barat	Grogol Petamburan	3	5	7	6	2	2	0	1	1	0	0	0	1	0	0	0	0	0	0	0	
2	Jakarta Barat	Taman Sari	3	6	5	7	2	1	2	1	0	0	1	0	1	0	0	0	0	1	1	0	0
3	Jakarta Barat	Tambora	8	8	8	10	1	2	0	0	0	1	1	1	0	0	1	0	0	0	0	1	0
4	Jakarta Barat	Kebon Jeruk	3	5	7	6	2	1	0	0	0	0	0	1	1	0	0	0	0	1	1	0	0
5	Jakarta Barat	Palmerah	1	4	6	5	2	2	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0
6	Jakarta Barat	Kembangan	1	3	6	5	1	2	0	1	1	0	0	0	1	1	0	0	0	1	0	0	0
7	Jakarta Barat	Cengkareng	3	5	5	6	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
8	Jakarta Barat	Kalideres	3	4	3	2	0	0	2	1	0	1	0	0	0	0	0	0	1	1	0	0	1
9	Jakarta Pusat	Gambir	3	4	6	6	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
10	Jakarta Pusat	Kemayoran	5	8	7	6	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0
11	Jakarta Pusat	Senen	2	5	5	6	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
12	Jakarta Pusat	Cempaka Putih	3	2	3	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
13	Jakarta Pusat	Menteng	4	4	5	4	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0
14	Jakarta Pusat	Tanah Abang	5	5	7	7	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
15	Jakarta Pusat	Johar Baru	1	3	4	3	0	0	0	0	0	0	0	1	0	1	0	0	0	2	0	0	0
16	Jakarta Pusat	Sawah Besar	4	3	4	5	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
17	Jakarta Timur	Matraman	4	3	5	6	0	2	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0
18	Jakarta Timur	Pulo Gadung	5	7	7	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Jakarta Timur	Cakung	5	4	6	6	2	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Jakarta Timur	Jatinegara	6	5	7	8	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
21	Jakarta Timur	Kramat	5	2	7	5	2	3	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1
22	Jakarta Timur	Pasar Rebo	1	3	4	3	4	1	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0
23	Jakarta Timur	Duren Sawit	3	4	3	5	3	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Jakarta Timur	Makasar	5	5	3	3	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Jakarta Timur	Ciracas	2	3	2	4	3	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Jakarta Timur	Cipayung	4	7	7	7	4	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	5	6	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Jakarta Selatan	Tebet	4	7	6	7	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0
28	Jakarta Selatan	Setia Budi	6	8	8	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Jakarta Selatan	Mampang Prapatan	5	4	4	4	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0
30	Jakarta Selatan	Pasar Minggu	5	5	5	6	1	2	1	1	0	0	0	0	0	0	0	0	1	0	1	0	0
31	Jakarta Selatan	Kebayoran Lama	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Jakarta Selatan	Cilandak	5	5	5	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Jakarta Selatan	Kebayoran Baru	10	8	7	10	0	2	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
34	Jakarta Selatan	Pancoran	3	6	5	4	0	0	0	1	0	0	0	0	0	0	0	0	1	3	0	1	0
35	Jakarta Selatan	Jagakarsa	3	5	5	3	2	0	1	3	0	0	0	0	0	0	0	0	0	1	1	0	0
36	Jakarta Selatan	Pesangrahan	3	4	4	5	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
37	Jakarta Utara	Penjaringan	1	4	5	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
38	Jakarta Utara	Tanjung Priok	3	5	5	6	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
39	Jakarta Utara	Koja	6	3	5	4	0	2	1	2	0	0	0	0	0	0	0	0	0	0	1	0	0
40	Jakarta Utara	Cilincing	5	6	5	6	0	0	1	1	1	0	0	0	0	0	0	1	0	1	1	0	0
41	Jakarta Utara	Pademangan	2	1	3	3	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
42	Jakarta Utara	Kelapa Gading	2	2	2	2	1	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0
Total			166	202	225	222	49	41	27	29	9	3	2	5	7	6	5	2	14	10	6	3	



Number of Answer

			2-1-7																			
			Which facility do you use for toilet (for only respondents answering as No in 2-1)?																			
			Single Choice																			
			1				2				3				4				5			
			Toilets in neighboring houses				MCK				Vacant land				River, pond, open channel, drainage				Others			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Jakarta Barat	Taman Sari	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Jakarta Barat	Tambora	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Jakarta Barat	Kebon Jeruk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Jakarta Barat	Palmerah	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Jakarta Barat	Kembangan	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Jakarta Barat	Cengkareng	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Jakarta Barat	Kalideres	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Jakarta Pusat	Gambir	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Jakarta Pusat	Kemayoran	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Jakarta Pusat	Senen	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Jakarta Pusat	Cempaka Putih	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Jakarta Pusat	Menteng	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Jakarta Pusat	Tanah Abang	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Jakarta Pusat	Johar Baru	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
16	Jakarta Pusat	Sawah Besar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Jakarta Timur	Matraman	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Jakarta Timur	Pulo Gadung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
19	Jakarta Timur	Cakung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Jakarta Timur	Jatinegara	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Jakarta Timur	Kramat	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Jakarta Timur	Pasar Rebo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Jakarta Timur	Duren Sawit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Jakarta Timur	Makasar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Jakarta Timur	Ciracas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Jakarta Timur	Cipayang	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Jakarta Selatan	Tebet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Jakarta Selatan	Setia Budi	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Jakarta Selatan	Mampang Prapatan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Jakarta Selatan	Pasar Minggu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Jakarta Selatan	Kebayoran Lama	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Jakarta Selatan	Cilandak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Jakarta Selatan	Kebayoran Baru	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
34	Jakarta Selatan	Pancoran	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Jakarta Selatan	Jagakarsa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Jakarta Selatan	Pesangrahan	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Jakarta Utara	Penjaringan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	Jakarta Utara	Tanjung Priok	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	Jakarta Utara	Koja	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	Jakarta Utara	Cilincing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	Jakarta Utara	Pademangan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	Jakarta Utara	Kelapa Gading	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			2	1	0	0	17	3	1	0	1	0	0	0	0	0	0	0	1	0	0	0

Number of Answer			2-1-8							
			How far from your house is the facility of Question 2-1-7 (for only respondents answering as No in 2-1)?							
			Single Choice							
			1				2			
			Within 10m from the house				More than 10m from the house			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	0	0	0	0	0	0	0	0
2	Jakarta Barat	Taman Sari	0	0	0	0	1	0	0	0
3	Jakarta Barat	Tambora	2	0	0	0	0	0	0	0
4	Jakarta Barat	Kebon Jeruk	0	0	0	0	0	0	0	0
5	Jakarta Barat	Palmerah	0	0	0	0	1	0	0	0
6	Jakarta Barat	Kembangan	1	0	0	0	0	0	0	0
7	Jakarta Barat	Cengkareng	1	0	0	0	0	0	0	0
8	Jakarta Barat	Kalkderes	1	0	0	0	0	0	0	0
9	Jakarta Pusat	Gambir	2	0	0	0	0	0	0	0
10	Jakarta Pusat	Kemayoran	1	0	0	0	1	0	0	0
11	Jakarta Pusat	Senen	2	0	0	0	1	0	0	0
12	Jakarta Pusat	Cempaka Putih	0	0	0	0	0	0	0	0
13	Jakarta Pusat	Menteng	0	0	0	0	0	0	0	0
14	Jakarta Pusat	Tanah Abang	1	0	0	0	1	1	0	0
15	Jakarta Pusat	Johar Baru	1	0	0	0	0	0	0	0
16	Jakarta Pusat	Sawah Besar	0	0	0	0	0	0	0	0
17	Jakarta Timur	Matraman	0	0	0	0	0	1	0	0
18	Jakarta Timur	Pulo Gadung	1	0	0	0	0	0	0	0
19	Jakarta Timur	Cakung	0	0	0	0	0	0	0	0
20	Jakarta Timur	Jatinegara	0	0	0	0	0	0	0	0
21	Jakarta Timur	Kramat	0	1	0	0	0	0	0	0
22	Jakarta Timur	Pasar Rebo	0	0	0	0	0	0	0	0
23	Jakarta Timur	Duren Sawit	0	0	0	0	0	0	0	0
24	Jakarta Timur	Makasar	0	0	0	0	0	0	0	0
25	Jakarta Timur	Ciracas	0	0	0	0	0	0	0	0
26	Jakarta Timur	Cipayung	0	0	0	0	0	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	0	0
27	Jakarta Selatan	Tebet	0	0	0	0	0	0	0	0
28	Jakarta Selatan	Setia Budi	1	0	0	0	0	0	0	0
29	Jakarta Selatan	Mampang Prapatan	0	0	0	0	0	0	0	0
30	Jakarta Selatan	Pasar Minggu	0	0	0	0	0	0	0	0
31	Jakarta Selatan	Kebayoran Lama	0	0	0	0	0	0	0	0
32	Jakarta Selatan	Cilandak	0	0	0	0	0	0	0	0
33	Jakarta Selatan	Kebayoran Baru	0	0	0	0	0	0	1	0
34	Jakarta Selatan	Pancoran	0	0	0	0	0	0	0	0
35	Jakarta Selatan	Jagakarsa	0	0	0	0	0	0	0	0
36	Jakarta Selatan	Pesanggrahan	0	1	0	0	0	0	0	0
37	Jakarta Utara	Penjaringan	0	0	0	0	0	0	0	0
38	Jakarta Utara	Tanjung Priok	2	0	0	0	0	0	0	0
39	Jakarta Utara	Koja	0	0	0	0	0	0	0	0
40	Jakarta Utara	Cilincing	0	0	0	0	0	0	0	0
41	Jakarta Utara	Pademangan	0	0	0	0	0	0	0	0
42	Jakarta Utara	Kelapa Gading	0	0	0	0	0	0	0	0
Total			16	2	0	0	5	2	1	0



Number of Answer

2-2-2																										
About the waste water from the kitchen, laundry and bathroom, What is your problem on the waste water?																										
Single Choice																										
1																										
2																										
3																										
4																										
5																										
6																										
Overflow in the house frequently																										
Overflow in the house sometimes																										
Overflow outside the house frequently																										
Overflow outside the house sometimes																										
Toilet is near the well (water source)																										
Others																										
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	0	0	0	0	0	1	2	1	0	0	0	0	1	2	0	0	0	0	0	0	6	4	5	6
2	Jakarta Barat	Taman Sari	0	0	0	1	0	1	0	0	1	0	1	0	1	1	1	1	0	1	0	1	6	5	6	5
3	Jakarta Barat	Tambora	0	0	0	1	0	1	0	0	0	0	0	0	3	3	0	0	1	0	0	0	7	7	11	10
4	Jakarta Barat	Kebon Jeruk	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	7	6	7	6
5	Jakarta Barat	Palmerah	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	1	6	4	6	3
6	Jakarta Barat	Kembangan	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	0	5	5	5	5
7	Jakarta Barat	Cengkareng	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	5	4	6	5
8	Jakarta Barat	Kalideres	0	0	1	0	1	0	1	1	0	1	0	0	1	1	1	2	1	0	0	1	2	3	2	1
9	Jakarta Pusat	Gambir	0	0	0	0	0	0	0	0	0	1	1	1	2	1	0	1	0	0	0	0	4	4	5	4
10	Jakarta Pusat	Kemayoran	0	0	0	1	2	2	1	0	1	0	0	0	2	0	2	2	0	0	0	0	3	6	5	5
11	Jakarta Pusat	Senen	0	0	0	0	0	1	0	2	1	0	0	0	3	1	1	0	0	0	0	0	2	4	5	4
12	Jakarta Pusat	Cempaka Putih	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2	3	3	2
13	Jakarta Pusat	Menteng	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	4	3	4	4
14	Jakarta Pusat	Tanah Abang	0	0	0	0	0	1	0	0	1	1	0	0	1	0	1	0	0	0	0	0	5	5	6	7
15	Jakarta Pusat	Johar Baru	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	0	0	0	0	3	3	4	1
16	Jakarta Pusat	Sawah Besar	0	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	5	3	3	4
17	Jakarta Timur	Matraman	2	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	4	6	4	5
18	Jakarta Timur	Pulo Gadung	0	0	0	0	0	0	0	2	0	0	0	0	1	1	1	1	0	0	0	0	6	6	6	4
19	Jakarta Timur	Cakung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	6	7	7	7
20	Jakarta Timur	Jatinegara	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	7	8	7	6
21	Jakarta Timur	Kramat	0	0	1	1	0	0	0	0	0	0	0	1	0	0	2	1	1	1	0	0	6	6	4	4
22	Jakarta Timur	Pasar Rebo	0	0	0	0	0	1	0	1	1	0	0	1	1	0	1	1	0	1	0	0	3	3	4	2
23	Jakarta Timur	Duren Sawit	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	6	6	5	5
24	Jakarta Timur	Makasar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	5	5	4	0
25	Jakarta Timur	Ciracas	0	0	0	0	0	1	0	1	0	0	0	0	1	1	0	0	1	0	0	0	3	3	5	4
26	Jakarta Timur	Cipayung	0	0	1	0	0	0	0	1	0	0	1	1	0	0	0	0	1	1	0	0	7	7	6	6
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	2	4	5	6	4
27	Jakarta Selatan	Tebet	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	1	5	5	7	6
28	Jakarta Selatan	Setia Budi	0	0	0	0	0	0	0	1	1	0	0	0	1	2	2	1	0	1	0	0	6	5	6	6
29	Jakarta Selatan	Mampang Prapatan	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	1	0	1	0	0	4	3	3	3
30	Jakarta Selatan	Pasar Minggu	0	0	1	1	0	0	0	1	0	0	0	0	1	2	0	0	2	1	1	1	4	4	5	4
31	Jakarta Selatan	Kebayoran Lama	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	2	0	0	0	1	4	5	6	3
32	Jakarta Selatan	Cilandak	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	1	4	3	4	3
33	Jakarta Selatan	Kebayoran Baru	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	9	10	10	10
34	Jakarta Selatan	Pancoran	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	6	5	6	4
35	Jakarta Selatan	Jagakarsa	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	5	5	4	5
36	Jakarta Selatan	Pesanggrahan	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	4	4	3	5
37	Jakarta Utara	Penjaringan	0	0	1	0	2	3	0	1	1	0	2	0	0	1	0	0	0	0	0	1	2	1	2	3
38	Jakarta Utara	Tanjung Priok	0	0	0	0	3	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	3	6	6	6
39	Jakarta Utara	Koja	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	4	5	5	6
40	Jakarta Utara	Ciincing	0	0	0	0	0	1	3	0	1	1	1	1	0	0	0	0	0	0	0	0	6	5	3	6
41	Jakarta Utara	Pademangan	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	3	2	2	2
42	Jakarta Utara	Kelapa Gading	0	1	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	2	3	1
Total			6	3	8	7	11	16	15	18	9	7	7	8	28	26	16	23	12	13	4	13	200	201	216	192

Number of Answer

			2-3-1							
			Is MCK facility near your house?							
			Single Choice							
			1				2			
			Yes				No			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	2	2	1	0	5	5	6	7
2	Jakarta Barat	Taman Sari	6	4	2	0	2	4	6	8
3	Jakarta Barat	Tambora	8	7	4	0	3	4	7	11
4	Jakarta Barat	Kebon Jeruk	0	0	0	1	7	7	7	6
5	Jakarta Barat	Palmerah	2	3	1	0	4	3	5	6
6	Jakarta Barat	Kembangan	1	0	0	1	5	6	6	5
7	Jakarta Barat	Cengkareng	4	2	3	0	2	4	3	6
8	Jakarta Barat	Kalideres	1	2	1	1	4	3	4	4
9	Jakarta Pusat	Gambir	3	2	2	2	3	4	4	4
10	Jakarta Pusat	Kemayoran	4	0	3	0	4	8	5	8
11	Jakarta Pusat	Senen	5	3	3	2	1	3	3	4
12	Jakarta Pusat	Cempaka Putih	0	0	0	1	3	3	3	2
13	Jakarta Pusat	Menteng	2	3	3	0	3	2	2	5
14	Jakarta Pusat	Tanah Abang	4	4	2	1	3	3	5	6
15	Jakarta Pusat	Johar Baru	2	3	2	2	2	1	2	2
16	Jakarta Pusat	Sawah Besar	1	3	1	1	4	2	4	4
17	Jakarta Timur	Matraman	1	2	0	1	5	4	6	5
18	Jakarta Timur	Pulo Gadung	3	1	1	0	4	6	6	7
19	Jakarta Timur	Cakung	0	2	0	0	7	5	7	7
20	Jakarta Timur	Jatinegara	1	0	2	0	7	8	6	8
21	Jakarta Timur	Kramat	1	2	1	0	6	5	6	7
22	Jakarta Timur	Pasar Rebo	0	0	0	1	5	5	5	4
23	Jakarta Timur	Duren Sawit	0	1	0	1	6	5	6	5
24	Jakarta Timur	Makasar	0	0	0	0	5	5	5	5
25	Jakarta Timur	Ciracas	0	1	0	1	5	4	5	4
26	Jakarta Timur	Cipayung	0	0	0	0	8	8	8	8
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	6	6	6	1
27	Jakarta Selatan	Tebet	1	3	0	0	6	4	7	7
28	Jakarta Selatan	Setia Budi	1	1	2	2	7	7	6	6
29	Jakarta Selatan	Mampang Prapatan	1	1	0	0	4	4	5	5
30	Jakarta Selatan	Pasar Minggu	1	0	1	1	6	7	6	6
31	Jakarta Selatan	Kebayoran Lama	1	1	0	2	5	5	6	4
32	Jakarta Selatan	Cilandak	2	0	0	1	3	5	5	4
33	Jakarta Selatan	Kebayoran Baru	3	3	3	0	7	7	7	10
34	Jakarta Selatan	Pancoran	0	1	0	1	6	5	6	5
35	Jakarta Selatan	Jagakarsa	1	0	1	0	5	6	5	6
36	Jakarta Selatan	Pesanggrahan	0	1	0	0	5	4	5	5
37	Jakarta Utara	Penjaringan	2	2	3	2	3	3	2	3
38	Jakarta Utara	Tanjung Priok	3	0	2	0	4	7	5	7
39	Jakarta Utara	Koja	2	3	2	1	4	3	4	5
40	Jakarta Utara	Cilincing	2	4	2	1	5	3	5	6
41	Jakarta Utara	Pademangan	3	3	3	0	0	0	0	3
42	Jakarta Utara	Kelapa Gading	0	1	1	0	3	2	2	3
Total			74	71	52	27	192	195	214	234

Number of Answer

			2-3-2																				
			How often do you use MCK facility?																				
			Single Choice																				
			1				2				3				4				5				
			Everyday				2-3 times in a week				One time in a week				One time in a month				Rare to use				
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	
1	Jakarta Barat	Grogol Petamburan	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	7	6	7	7
2	Jakarta Barat	Taman Sari	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	6	8	8	8	
3	Jakarta Barat	Tambora	3	0	0	0	0	0	0	0	1	1	0	0	1	1	0	1	6	9	11	10	
4	Jakarta Barat	Kebon Jeruk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7	
5	Jakarta Barat	Palmerah	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	6	6	
6	Jakarta Barat	Kembangan	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6	6	6	
7	Jakarta Barat	Cengkareng	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	5	5	5	6	
8	Jakarta Barat	Kalideres	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	4	5	
9	Jakarta Pusat	Gambir	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6	6	6	
10	Jakarta Pusat	Kemayoran	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	8	8	8	
11	Jakarta Pusat	Senen	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6	6	6	
12	Jakarta Pusat	Cempaka Putih	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	2	
13	Jakarta Pusat	Menteng	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5	
14	Jakarta Pusat	Tanah Abang	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	4	6	7	7	
15	Jakarta Pusat	Johar Baru	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	4	4	3	
16	Jakarta Pusat	Sawah Besar	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	5	4	5	5	
17	Jakarta Timur	Matraman	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6	4	6	5	
18	Jakarta Timur	Pulo Gadung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7	
19	Jakarta Timur	Cakung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7	
20	Jakarta Timur	Jatinegara	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8	
21	Jakarta Timur	Kramat	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6	5	6	7	
22	Jakarta Timur	Pasar Rebo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5	
23	Jakarta Timur	Duren Sawit	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	5	
24	Jakarta Timur	Makasar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5	
25	Jakarta Timur	Ciracas	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	5	5	
26	Jakarta Timur	Cipayung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8	
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	6	
27	Jakarta Selatan	Tebet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7	
28	Jakarta Selatan	Setia Budi	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	8	8	8	
29	Jakarta Selatan	Mampang Prapatan	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	5	5	
30	Jakarta Selatan	Pasar Minggu	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	7	7	6	6	
31	Jakarta Selatan	Kebayoran Lama	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	6	
32	Jakarta Selatan	Cilandak	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	5	5	4	
33	Jakarta Selatan	Kebayoran Baru	2	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	8	9	8	10	
34	Jakarta Selatan	Pancoran	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	6	6	5	5	
35	Jakarta Selatan	Jagakarsa	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6	4	6	
36	Jakarta Selatan	Pesanggrahan	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	5	5	
37	Jakarta Utara	Penjaringan	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	4	4	5	5	
38	Jakarta Utara	Tanjung Priok	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	5	6	7	7	
39	Jakarta Utara	Koja	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	4	5	6	6	
40	Jakarta Utara	Cilincing	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	7	7	6	5	
41	Jakarta Utara	Pademangan	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	2	3	3	
42	Jakarta Utara	Kelapa Gading	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	
Total			24	8	7	7	2	2	1	1	2	2	0	1	5	6	2	1	233	248	256	251	



Number of Answer

		2-3-3																					
		How often do you use a toilet in MCK facility?																					
		Single Choice																					
		1				2				3				4				5					
		Everyday				2-3 times in a week				One time in a week				One time in a month				Rare to use					
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	
1	Jakarta Barat	Grogol Petamburan	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	7	6	7	7
2	Jakarta Barat	Taman Sari	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	6	8	8	8	
3	Jakarta Barat	Tambora	3	0	0	0	0	0	0	0	1	1	0	0	1	1	0	1	6	9	11	10	
4	Jakarta Barat	Kebon Jeruk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7	
5	Jakarta Barat	Palmerah	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6	6	6	
6	Jakarta Barat	Kembangan	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6	6	6	
7	Jakarta Barat	Cengkareng	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	5	6	6	
8	Jakarta Barat	Kalideres	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	4	5	
9	Jakarta Pusat	Gambir	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6	6	6	
10	Jakarta Pusat	Kemayoran	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	8	8	8	
11	Jakarta Pusat	Senen	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6	6	6	
12	Jakarta Pusat	Cempaka Putih	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	2	
13	Jakarta Pusat	Menteng	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5	
14	Jakarta Pusat	Tanah Abang	2	1	0	0	0	0	0	0	0	0	0	1	0	0	0	4	6	7	7		
15	Jakarta Pusat	Johar Baru	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	4	4	3		
16	Jakarta Pusat	Sawah Besar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	5	4	5	5		
17	Jakarta Timur	Matraman	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	6	4	6	5		
18	Jakarta Timur	Pulo Gadung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	7	7	6		
19	Jakarta Timur	Cakung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7		
20	Jakarta Timur	Jatinegara	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8		
21	Jakarta Timur	Kramat	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	6	5	6	7		
22	Jakarta Timur	Pasar Rebo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5		
23	Jakarta Timur	Duren Sawit	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	6	6	6	5		
24	Jakarta Timur	Makasar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5		
25	Jakarta Timur	Ciracas	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	5	5		
26	Jakarta Timur	Cipayung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8		
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	1		
27	Jakarta Selatan	Tebet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7		
28	Jakarta Selatan	Setia Budi	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	8	8	8		
29	Jakarta Selatan	Mampang Prapatan	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	5	5		
30	Jakarta Selatan	Pasar Minggu	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	7	7	6	6		
31	Jakarta Selatan	Kebayoran Lama	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	6		
32	Jakarta Selatan	Cilandak	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	5	5	4		
33	Jakarta Selatan	Kebayoran Baru	2	0	1	0	0	0	0	0	0	0	0	1	1	0	8	9	8	10			
34	Jakarta Selatan	Pancoran	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	6	6	5	5		
35	Jakarta Selatan	Jagakarsa	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	5	6	4	6		
36	Jakarta Selatan	Pesanggrahan	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	5	5		
37	Jakarta Utara	Penjaringan	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	4	5	5		
38	Jakarta Utara	Tanjung Priok	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	5	6	7	6		
39	Jakarta Utara	Koja	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	4	5	6	6		
40	Jakarta Utara	Cilincing	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	7	7	6	6		
41	Jakarta Utara	Pademangan	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	2	3	3			
42	Jakarta Utara	Kelapa Gading	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3		
Total			25	7	6	7	2	2	1	1	2	2	0	0	5	6	2	3	232	249	257	250	

Number of Answer

			2-3-4															
			How do you think about the number of MCK facility?															
			Single Choice															
			1				2				3				4			
			Not enough				Enough				Too much				Unknown			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	0	1	0	0	2	0	0	0	0	0	0	0	5	6	7	7
2	Jakarta Barat	Taman Sari	1	1	2	1	3	3	1	0	1	0	0	0	3	4	5	7
3	Jakarta Barat	Tambora	1	1	1	0	4	4	1	0	1	0	1	0	5	6	8	11
4	Jakarta Barat	Kebon Jeruk	0	0	0	0	0	0	0	1	1	0	0	0	7	7	6	5
5	Jakarta Barat	Palmerah	2	0	0	0	0	0	0	0	0	0	0	0	4	6	6	6
6	Jakarta Barat	Kembangan	0	0	0	0	1	0	0	0	0	0	0	0	5	6	6	6
7	Jakarta Barat	Cengkareng	2	3	1	0	2	1	0	1	0	0	0	0	2	2	5	5
8	Jakarta Barat	Kalideres	1	0	0	1	0	0	2	0	1	0	0	0	3	5	3	4
9	Jakarta Pusat	Gambir	1	0	0	0	2	0	0	1	0	0	0	0	3	6	6	5
10	Jakarta Pusat	Kemayoran	1	0	1	0	3	0	1	0	0	0	0	0	4	8	6	8
11	Jakarta Pusat	Senen	2	0	1	0	3	3	1	1	0	0	0	1	1	3	4	4
12	Jakarta Pusat	Cempaka Putih	0	0	0	0	0	0	0	0	1	0	0	0	3	3	3	2
13	Jakarta Pusat	Menteng	1	0	0	0	0	0	0	0	0	0	0	0	4	5	5	5
14	Jakarta Pusat	Tanah Abang	0	2	0	1	3	0	1	0	0	0	0	0	4	5	6	6
15	Jakarta Pusat	Johar Baru	0	0	1	0	1	3	1	2	0	0	0	0	3	1	2	2
16	Jakarta Pusat	Sawah Besar	1	0	2	1	2	3	1	0	0	0	0	0	2	2	2	4
17	Jakarta Timur	Matraman	0	4	1	1	1	1	0	3	0	0	0	0	5	1	5	2
18	Jakarta Timur	Pulo Gadung	1	2	1	3	4	3	5	2	0	0	0	0	2	2	1	2
19	Jakarta Timur	Cakung	0	0	0	0	1	0	0	0	0	0	0	0	6	7	7	7
20	Jakarta Timur	Jatinegara	0	1	3	2	3	1	2	0	0	0	0	0	5	6	3	6
21	Jakarta Timur	Kramat	1	0	0	0	0	3	1	1	0	0	0	0	6	4	6	6
22	Jakarta Timur	Pasar Rebo	0	0	0	0	0	1	0	0	0	0	0	0	5	4	5	5
23	Jakarta Timur	Duren Sawit	0	0	0	0	0	0	0	1	0	0	0	0	6	6	6	5
24	Jakarta Timur	Makasar	0	0	0	0	0	2	0	1	0	0	0	0	5	3	5	4
25	Jakarta Timur	Ciracas	0	0	0	1	0	0	0	0	0	0	0	0	5	5	5	4
26	Jakarta Timur	Cipayung	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	1
27	Jakarta Selatan	Tebet	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7
28	Jakarta Selatan	Setia Budi	0	0	0	0	1	1	0	0	0	0	0	0	7	7	8	8
29	Jakarta Selatan	Mampang Prapatan	1	0	0	0	0	0	0	2	0	0	0	0	4	5	5	3
30	Jakarta Selatan	Pasar Minggu	1	1	0	0	0	1	0	3	0	0	0	0	6	5	7	4
31	Jakarta Selatan	Kebayoran Lama	0	0	0	1	0	1	0	3	0	0	0	0	6	5	6	2
32	Jakarta Selatan	Cilandak	0	0	0	0	1	0	0	2	0	0	0	0	4	5	5	3
33	Jakarta Selatan	Kebayoran Baru	1	1	1	0	1	0	0	1	1	0	0	0	7	9	9	9
34	Jakarta Selatan	Pancoran	0	2	0	1	0	0	0	0	0	0	0	0	6	4	6	5
35	Jakarta Selatan	Jagakarsa	0	0	0	1	1	0	2	1	0	0	0	0	5	6	4	4
36	Jakarta Selatan	Pesanggrahan	0	1	0	0	0	0	0	1	0	0	0	0	5	4	5	4
37	Jakarta Utara	Penjaringan	0	1	1	1	3	0	0	2	0	0	0	0	2	4	4	2
38	Jakarta Utara	Tanjung Priok	1	1	1	1	3	1	1	1	0	0	0	0	3	5	5	5
39	Jakarta Utara	Koja	3	3	2	1	1	1	2	1	0	1	0	0	2	1	2	4
40	Jakarta Utara	Cilincing	1	1	3	3	1	3	0	1	1	1	0	0	4	2	4	3
41	Jakarta Utara	Pademangan	2	0	2	1	0	3	1	0	0	0	0	0	1	0	0	2
42	Jakarta Utara	Kelapa Gading	2	0	0	0	0	3	2	1	0	0	0	0	1	0	1	2
Total			27	26	24	21	47	42	26	34	5	2	1	2	187	196	215	204

Number of Answer

		2-3-5																	
		How do you think about the user fee for MCK facility?																	
		Single Choice																	
		1				2				3				4					
		Too expensive				Affordable				Cheep				Unknown					
No.	Wilayah	Kecamatan		L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan		0	0	0	0	2	1	0	0	0	0	0	5	6	7	7	
2	Jakarta Barat	Taman Sari		1	0	0	0	4	2	1	1	1	2	2	0	2	4	5	7
3	Jakarta Barat	Tambora		1	1	0	0	2	3	1	0	3	0	2	0	5	7	8	11
4	Jakarta Barat	Kebon Jeruk		0	0	0	0	0	0	1	1	0	0	0	1	7	7	6	5
5	Jakarta Barat	Palmerah		2	0	0	0	0	1	0	0	0	1	0	0	4	4	6	6
6	Jakarta Barat	Kembangan		0	0	0	0	1	0	0	0	0	0	0	5	6	6	6	
7	Jakarta Barat	Cengkareng		1	1	0	0	3	3	1	0	0	0	0	2	2	5	6	
8	Jakarta Barat	Kalideres		1	0	0	0	1	1	0	0	0	0	0	1	3	4	5	4
9	Jakarta Pusat	Gambir		0	0	0	0	2	0	0	1	0	0	0	1	4	6	6	4
10	Jakarta Pusat	Kenayoran		0	0	0	0	1	0	0	0	1	0	1	0	6	8	7	8
11	Jakarta Pusat	Senen		1	0	0	0	1	0	2	1	1	2	0	0	3	4	4	5
12	Jakarta Pusat	Cempaka Putih		0	0	0	0	0	0	0	1	0	0	0	0	3	3	3	2
13	Jakarta Pusat	Menteng		0	0	0	0	0	0	0	0	0	1	0	0	5	4	5	5
14	Jakarta Pusat	Tanah Abang		1	1	0	1	0	0	0	0	2	1	1	0	4	5	6	6
15	Jakarta Pusat	Johar Baru		0	0	0	0	0	0	2	1	3	3	0	1	1	1	2	2
16	Jakarta Pusat	Sawah Besar		0	0	1	0	2	2	2	1	1	1	0	1	2	2	2	3
17	Jakarta Timur	Matraman		0	0	0	0	1	3	0	3	0	0	1	1	5	3	5	2
18	Jakarta Timur	Pulo Gadung		0	0	0	0	5	2	3	1	1	1	2	3	1	4	2	3
19	Jakarta Timur	Cakung		0	0	0	0	1	0	0	0	1	1	0	0	5	6	7	7
20	Jakarta Timur	Jatinegara		0	0	0	0	2	1	3	0	1	1	1	2	5	6	4	6
21	Jakarta Timur	Kramat		0	0	0	1	1	1	1	0	0	0	0	0	6	6	6	6
22	Jakarta Timur	Pasar Rebo		0	0	0	0	0	1	0	1	1	0	0	0	4	4	5	4
23	Jakarta Timur	Duren Sawit		0	0	0	0	0	0	0	1	0	0	0	0	6	6	6	5
24	Jakarta Timur	Makasar		0	0	0	0	1	1	0	0	0	1	0	0	4	3	5	5
25	Jakarta Timur	Ciracas		0	0	0	0	1	0	0	2	0	0	0	1	4	5	5	2
26	Jakarta Timur	Cipayung		1	0	0	0	0	0	0	0	1	0	0	0	6	8	8	8
23*	Jakarta Timur	Duren Sawit (Malaka Sari)		0	0	0	0	0	1	0	0	0	0	0	0	6	5	6	1
27	Jakarta Selatan	Tebet		0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7
28	Jakarta Selatan	Setia Budi		0	1	0	0	1	0	0	1	0	0	0	0	7	7	8	7
29	Jakarta Selatan	Mampang Prapatan		0	0	0	0	1	0	0	0	0	0	0	3	4	5	5	2
30	Jakarta Selatan	Pasar Minggu		0	0	0	0	0	2	0	1	0	0	0	2	7	5	7	4
31	Jakarta Selatan	Kebayoran Lama		0	0	0	0	0	0	0	0	0	0	1	6	6	6	5	
32	Jakarta Selatan	Cilandak		1	0	0	0	0	0	0	0	0	0	0	1	4	5	5	4
33	Jakarta Selatan	Kebayoran Baru		0	0	0	0	1	0	1	0	1	1	0	2	8	9	9	8
34	Jakarta Selatan	Pancoran		0	0	0	0	0	1	0	0	0	0	0	1	6	5	6	5
35	Jakarta Selatan	Jagakarsa		0	0	0	0	1	0	2	0	0	0	0	0	5	6	4	6
36	Jakarta Selatan	Pesangrahan		0	0	0	0	0	1	0	0	0	0	0	0	5	4	5	5
37	Jakarta Utara	Penjaringan		0	0	0	0	3	1	1	1	0	0	1	1	2	4	3	3
38	Jakarta Utara	Tanjung Priok		0	0	0	0	1	1	0	1	1	0	2	0	5	6	5	6
39	Jakarta Utara	Koja		0	1	1	0	2	1	2	1	2	1	1	1	2	3	2	4
40	Jakarta Utara	Cilincing		0	0	0	0	2	2	1	4	0	2	4	2	5	3	2	1
41	Jakarta Utara	Pademangan		0	0	1	0	0	1	2	1	2	2	0	0	1	0	0	2
42	Jakarta Utara	Kelapa Gading		1	0	0	0	1	1	1	2	0	1	0	0	1	1	2	1
Total				11	5	3	2	44	34	27	27	23	22	18	26	188	205	218	206

Number of Answer

		2-3-6																
		How do you think the surrounding environment of MCK facility?																
		Single Choice																
		1				2				3				4				
		I am satisfied with the existing condition.				Flush toilet should be installed.				It is dirty and has offensive odor.				Unknown				
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	2	1	0	0	0	0	0	0	0	0	0	0	5	6	7	7
2	Jakarta Barat	Taman Sari	3	2	1	0	0	1	0	0	2	1	2	1	3	4	5	7
3	Jakarta Barat	Tambora	4	3	0	0	1	0	0	0	1	0	2	0	5	8	9	11
4	Jakarta Barat	Kebon Jeruk	0	0	0	1	0	0	0	0	0	0	0	1	7	7	7	5
5	Jakarta Barat	Palmerah	0	0	0	0	0	0	0	0	2	1	0	0	4	5	6	6
6	Jakarta Barat	Kembangan	0	0	0	0	0	0	0	0	1	0	0	0	5	6	6	6
7	Jakarta Barat	Cengkareng	3	2	0	0	0	1	0	0	1	1	1	0	2	2	5	6
8	Jakarta Barat	Kalideres	1	1	1	0	0	0	0	0	1	0	0	1	3	4	4	4
9	Jakarta Pusat	Gambir	2	0	0	1	0	0	0	0	1	0	0	0	3	6	6	5
10	Jakarta Pusat	Kemayoran	1	0	0	1	0	0	0	0	3	0	2	0	4	8	6	7
11	Jakarta Pusat	Senen	2	1	1	0	0	0	0	0	3	1	0	2	1	4	5	4
12	Jakarta Pusat	Cempaka Putih	0	0	0	1	0	0	0	0	0	0	0	0	3	3	3	2
13	Jakarta Pusat	Menteng	1	1	0	0	0	0	0	0	0	0	0	0	4	4	5	5
14	Jakarta Pusat	Tanah Abang	2	0	1	0	0	1	0	0	1	1	0	1	4	5	6	6
15	Jakarta Pusat	Johar Baru	2	1	0	1	0	0	0	0	1	0	2	1	1	3	2	2
16	Jakarta Pusat	Sawah Besar	3	2	2	1	0	0	0	0	0	1	0	1	2	2	3	3
17	Jakarta Timur	Matraman	1	1	0	2	0	0	0	0	3	1	2	5	2	5	2	
18	Jakarta Timur	Pulo Gadung	3	2	3	3	1	0	1	1	0	1	2	0	3	4	1	3
19	Jakarta Timur	Cakung	1	0	0	0	0	0	0	0	1	1	0	0	5	6	7	7
20	Jakarta Timur	Jatinegara	2	2	0	0	1	0	2	0	0	0	2	1	5	6	4	7
21	Jakarta Timur	Kramat	0	2	0	0	1	0	1	1	0	1	0	0	6	4	6	6
22	Jakarta Timur	Pasar Rebo	0	1	0	1	0	0	0	0	0	0	0	0	5	4	5	4
23	Jakarta Timur	Duren Sawit	0	0	0	1	0	0	0	0	0	0	0	0	6	6	6	5
24	Jakarta Timur	Makasar	0	1	0	0	0	1	0	0	1	0	0	0	4	3	5	5
25	Jakarta Timur	Ciracas	0	0	0	0	0	0	0	2	1	0	0	0	4	5	5	3
26	Jakarta Timur	Cipayung	2	0	0	1	0	0	0	0	0	1	0	1	6	7	8	6
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	1
27	Jakarta Selatan	Tebet	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7
28	Jakarta Selatan	Setia Budi	1	1	0	0	0	0	0	0	0	0	0	0	7	7	8	8
29	Jakarta Selatan	Mampang Prapatan	1	0	0	2	0	0	0	0	0	0	0	1	4	5	5	2
30	Jakarta Selatan	Pasar Minggu	0	1	0	1	0	0	0	0	1	0	0	7	5	7	6	
31	Jakarta Selatan	Kebayoran Lama	0	0	0	3	0	0	0	1	0	0	0	1	6	6	6	1
32	Jakarta Selatan	Cilandak	2	0	0	2	0	0	0	0	0	0	0	3	5	5	3	
33	Jakarta Selatan	Kebayoran Baru	2	1	1	2	0	0	0	0	0	0	0	8	9	9	8	
34	Jakarta Selatan	Pancoran	0	0	0	1	0	0	0	0	1	1	0	2	5	5	6	3
35	Jakarta Selatan	Jagakarsa	1	0	2	1	0	0	0	0	0	0	0	5	6	4	5	
36	Jakarta Selatan	Pesanggrahan	0	2	0	1	0	0	0	0	0	1	0	5	3	4	4	
37	Jakarta Utara	Penjaringan	2	1	1	2	0	0	1	0	0	0	0	3	4	3	3	
38	Jakarta Utara	Tanjung Priok	1	1	0	0	0	2	0	2	1	0	1	4	5	5	6	
39	Jakarta Utara	Koja	2	4	3	1	0	0	2	0	2	0	0	1	2	2	1	4
40	Jakarta Utara	Cilincing	1	4	0	3	0	0	0	0	2	2	3	3	4	1	4	1
41	Jakarta Utara	Pademangan	0	1	0	0	0	1	2	0	1	1	1	1	2	0	0	2
42	Jakarta Utara	Kelapa Gading	1	3	0	2	0	0	1	0	1	0	0	0	1	0	2	1
Total			49	42	16	35	4	5	12	5	29	19	19	22	184	200	219	199

Number of Answer

			2-3-7															
			How do you think MCK facility?															
			Single Choice															
			1				2				3				4			
			It is necessary.				Unknown				It is not necessary because the fee is expensive.				It is not necessary because of other reasons except for the fee.			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	4	5	6	3	2	2	1	2	0	0	0	0	1	0	0	2
2	Jakarta Barat	Taman Sari	7	8	6	4	1	0	1	2	0	0	0	0	0	0	1	2
3	Jakarta Barat	Tambora	8	6	7	2	3	4	4	5	0	0	0	0	0	1	0	4
4	Jakarta Barat	Kebon Jeruk	5	3	3	4	1	3	4	2	0	0	0	0	1	1	0	1
5	Jakarta Barat	Palmerah	2	3	3	1	4	1	2	1	0	0	0	0	0	2	1	4
6	Jakarta Barat	Kembangan	3	2	3	3	1	3	1	0	0	0	0	0	2	1	2	3
7	Jakarta Barat	Cengkareng	5	6	3	3	0	0	1	2	0	0	0	0	1	0	2	1
8	Jakarta Barat	Kalideres	3	2	3	3	2	2	1	2	0	0	0	0	0	1	1	0
9	Jakarta Pusat	Gambir	5	4	2	4	1	2	2	2	0	0	0	0	0	0	2	0
10	Jakarta Pusat	Kemayoran	7	2	4	4	1	6	4	3	0	0	0	0	0	0	1	
11	Jakarta Pusat	Senen	5	5	4	4	1	1	1	2	0	0	0	0	0	0	1	0
12	Jakarta Pusat	Cempaka Putih	0	0	0	1	2	3	3	2	0	0	0	0	1	0	0	0
13	Jakarta Pusat	Menteng	4	5	5	3	1	0	0	2	0	0	0	0	0	0	0	0
14	Jakarta Pusat	Tanah Abang	7	6	5	3	0	1	2	3	0	0	0	0	0	0	1	
15	Jakarta Pusat	Johar Baru	3	3	3	4	1	1	0	0	0	0	1	0	0	0	0	0
16	Jakarta Pusat	Sawah Besar	5	5	4	3	0	0	0	1	0	0	0	0	0	1	1	
17	Jakarta Timur	Matraman	5	6	5	5	0	0	1	1	0	0	0	0	1	0	0	0
18	Jakarta Timur	Pulo Gadung	7	7	7	5	0	0	0	2	0	0	0	0	0	0	0	0
19	Jakarta Timur	Cakung	6	4	4	2	1	2	3	5	0	0	0	0	0	1	0	0
20	Jakarta Timur	Jatinegara	5	6	6	2	3	2	1	6	0	0	1	0	0	0	0	0
21	Jakarta Timur	Kramat	3	3	2	3	4	4	5	3	0	0	0	0	0	0	1	
22	Jakarta Timur	Pasar Rebo	2	2	2	4	3	3	3	1	0	0	0	0	0	0	0	0
23	Jakarta Timur	Duren Sawit	2	3	5	4	4	3	1	2	0	0	0	0	0	0	0	0
24	Jakarta Timur	Makasar	3	3	0	1	2	2	4	4	0	0	1	0	0	0	0	0
25	Jakarta Timur	Ciracas	1	2	0	3	3	3	4	2	0	0	0	1	0	1	0	0
26	Jakarta Timur	Cipayung	3	5	3	4	4	3	5	4	0	0	0	0	1	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	2	2	1	0	3	4	3	1	0	0	0	0	1	0	2	0
27	Jakarta Selatan	Tebet	5	4	3	4	1	3	3	3	0	0	0	0	1	0	1	0
28	Jakarta Selatan	Setia Budi	7	5	5	5	0	2	1	2	0	0	0	0	1	1	2	1
29	Jakarta Selatan	Mampang Prapatan	4	4	2	3	1	1	3	1	0	0	0	0	0	0	1	
30	Jakarta Selatan	Pasar Minggu	3	7	3	4	3	0	3	2	0	0	0	0	1	0	1	1
31	Jakarta Selatan	Kebayoran Lama	4	5	5	4	0	1	0	0	0	0	1	0	2	0	0	2
32	Jakarta Selatan	Cilandak	4	4	4	5	1	0	0	0	0	0	0	0	1	1	0	
33	Jakarta Selatan	Kebayoran Baru	9	9	9	7	1	1	1	0	0	0	0	0	0	0	3	
34	Jakarta Selatan	Pancoran	2	5	2	5	3	0	4	1	0	0	0	0	1	1	0	0
35	Jakarta Selatan	Jagakarsa	2	3	4	2	4	2	1	2	0	0	0	0	0	1	1	2
36	Jakarta Selatan	Pesanggrahan	2	5	4	4	2	0	1	0	0	0	0	0	1	0	0	1
37	Jakarta Utara	Penjaringan	5	5	4	5	0	0	0	0	0	0	0	0	0	1	0	
38	Jakarta Utara	Tanjung Priok	7	5	5	5	0	0	1	0	0	0	0	0	2	1	2	
39	Jakarta Utara	Koja	6	5	6	4	0	1	0	1	0	0	0	0	0	0	1	
40	Jakarta Utara	Cilincing	6	7	7	7	0	0	0	0	1	0	0	0	0	0	0	0
41	Jakarta Utara	Pademangan	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0
42	Jakarta Utara	Kelapa Gading	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0
Total			184	187	165	152	64	66	75	74	1	0	5	0	17	13	21	35



Number of Answer

			2-4															
			About your household wastes, How do you dispose your wastes?															
			Single Choice															
			1				2				3				4			
			Public collection service				Dispose into rivers				Dispose on the road				Dispose in the vacant space			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	7	7	7	7	0	0	0	0	0	0	0	0	0	0	0	0
2	Jakarta Barat	Taman Sari	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0
3	Jakarta Barat	Tambora	11	11	11	11	0	0	0	0	0	0	0	0	0	0	0	0
4	Jakarta Barat	Kebon Jeruk	6	6	7	6	0	0	0	0	0	0	0	0	1	1	0	1
5	Jakarta Barat	Palmerah	4	6	6	5	1	0	0	0	0	0	0	0	1	0	0	1
6	Jakarta Barat	Kembangan	5	5	6	5	0	1	0	0	0	0	0	0	1	0	0	1
7	Jakarta Barat	Cengkareng	5	6	5	6	0	0	0	0	0	0	0	0	1	0	1	0
8	Jakarta Barat	Kalideres	5	5	5	4	0	0	0	0	0	0	0	0	0	0	0	1
9	Jakarta Pusat	Gambir	6	5	6	6	0	0	0	0	0	0	0	0	0	1	0	0
10	Jakarta Pusat	Kemayoran	8	8	8	7	0	0	0	1	0	0	0	0	0	0	0	0
11	Jakarta Pusat	Senen	5	6	6	6	0	0	0	0	0	0	0	0	1	0	0	0
12	Jakarta Pusat	Cempaka Putih	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0
13	Jakarta Pusat	Menteng	5	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0
14	Jakarta Pusat	Tanah Abang	7	7	7	7	0	0	0	0	0	0	0	0	0	0	0	0
15	Jakarta Pusat	Johar Baru	4	3	4	4	0	0	0	0	0	0	0	0	0	1	0	0
16	Jakarta Pusat	Sawah Besar	5	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0
17	Jakarta Timur	Matraman	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0
18	Jakarta Timur	Pulo Gadung	4	7	7	7	2	0	0	0	0	0	0	0	1	0	0	0
19	Jakarta Timur	Cakung	7	7	7	7	0	0	0	0	0	0	0	0	0	0	0	0
20	Jakarta Timur	Jatinegara	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0
21	Jakarta Timur	Kramat	7	6	7	7	0	0	0	0	0	0	0	0	0	1	0	0
22	Jakarta Timur	Pasar Rebo	5	5	5	4	0	0	0	1	0	0	0	0	0	0	0	0
23	Jakarta Timur	Duren Sawit	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0
24	Jakarta Timur	Makasar	5	4	5	5	0	0	0	0	0	1	0	0	0	0	0	0
25	Jakarta Timur	Ciracas	4	5	5	5	0	0	0	0	0	0	0	0	1	0	0	0
26	Jakarta Timur	Cipayung	5	7	7	7	0	0	0	0	0	0	0	0	3	1	1	1
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	6	6	6	1	0	0	0	0	0	0	0	0	0	0	0	0
27	Jakarta Selatan	Tebet	7	7	7	7	0	0	0	0	0	0	0	0	0	0	0	0
28	Jakarta Selatan	Setia Budi	6	6	8	8	0	0	0	0	0	0	0	0	2	2	0	0
29	Jakarta Selatan	Mampang Prapatan	3	5	5	5	0	0	0	0	0	0	0	0	2	0	0	0
30	Jakarta Selatan	Pasar Minggu	5	6	7	7	0	1	0	0	0	0	0	0	2	0	0	0
31	Jakarta Selatan	Kebayoran Lama	5	6	6	5	0	0	0	0	1	0	0	0	0	0	0	1
32	Jakarta Selatan	Cilandak	5	4	4	5	0	0	0	0	0	0	0	0	0	1	1	0
33	Jakarta Selatan	Kebayoran Baru	8	10	10	10	0	0	0	0	1	0	0	0	1	0	0	0
34	Jakarta Selatan	Pancoran	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0
35	Jakarta Selatan	Jagakarsa	6	5	5	6	0	0	0	0	0	0	0	0	0	1	1	0
36	Jakarta Selatan	Pesanggrahan	5	4	5	5	0	0	0	0	0	0	0	0	0	1	0	0
37	Jakarta Utara	Penjaringan	5	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0
38	Jakarta Utara	Tanjung Priok	7	7	7	7	0	0	0	0	0	0	0	0	0	0	0	0
39	Jakarta Utara	Koja	5	6	6	6	1	0	0	0	0	0	0	0	0	0	0	0
40	Jakarta Utara	Cilincing	5	6	6	6	0	0	0	0	0	0	0	0	2	1	1	1
41	Jakarta Utara	Pademangan	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0
42	Jakarta Utara	Kelapa Gading	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0
Total			241	252	261	252	4	2	0	2	2	1	0	0	19	11	5	7

Number of Answer

2-5																										
About diseases which your family members suffered, and they received the hospital treatment in these 6 months., Which kind of diseases, which necessary for the hospital treatment, did your family members suffer?																										
Multiple Choice																										
1 2 3 4 5 6																										
Diarrhea Dengue fever Flu Skin diseases Polio Other diseases																										
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7	6	7	6
2	Jakarta Barat	Taman Sari	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	7	6	8	7
3	Jakarta Barat	Tambora	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	9	10	11	10
4	Jakarta Barat	Kebon Jeruk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7
5	Jakarta Barat	Palmerah	0	3	1	1	2	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5	3
6	Jakarta Barat	Kembangan	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	5
7	Jakarta Barat	Cengkareng	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	6	6	5	5
8	Jakarta Barat	Kalideres	0	0	0	0	1	1	0	2	0	0	2	0	1	0	0	0	0	0	0	0	3	4	3	3
9	Jakarta Pusat	Gambir	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6	6	5
10	Jakarta Pusat	Kemayoran	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	7	8	7
11	Jakarta Pusat	Senen	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6	5	5
12	Jakarta Pusat	Cempaka Putih	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	1
13	Jakarta Pusat	Menteng	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	5	5	4
14	Jakarta Pusat	Tanah Abang	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	7	7	6	6
15	Jakarta Pusat	Johar Baru	1	0	0	1	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	2
16	Jakarta Pusat	Sawah Besar	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	5	5
17	Jakarta Timur	Matraman	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	6
18	Jakarta Timur	Pulo Gadung	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6	7	7	6
19	Jakarta Timur	Cakung	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6	7	7	6
20	Jakarta Timur	Jatinegara	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	8	7	7	8
21	Jakarta Timur	Kramat	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	6	6	7	6
22	Jakarta Timur	Pasar Rebo	0	1	0	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	4	4	3	4
23	Jakarta Timur	Duren Sawit	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6	5	5	4
24	Jakarta Timur	Makasar	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	4	0
25	Jakarta Timur	Ciracas	0	0	0	0	2	1	0	0	2	1	1	1	0	0	0	0	0	0	0	0	1	3	4	4
26	Jakarta Timur	Cipayung	0	0	0	0	0	2	0	0	2	2	2	2	0	0	0	0	0	0	0	0	6	4	6	6
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	4	6	5	4
27	Jakarta Selatan	Tebet	0	0	0	1	2	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	5	7	7	4
28	Jakarta Selatan	Setia Budi	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	8	8	7
29	Jakarta Selatan	Mampang Prapatan	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5	4	4	4
30	Jakarta Selatan	Pasar Minggu	0	1	1	0	2	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	4	5	5	5
31	Jakarta Selatan	Kebayoran Lama	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	6	5	6	4
32	Jakarta Selatan	Cilandak	1	0	1	0	1	1	2	1	0	1	0	1	0	0	0	0	0	0	0	0	3	3	2	3
33	Jakarta Selatan	Kebayoran Baru	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	9	9	10
34	Jakarta Selatan	Pancoran	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	5	6	6	4
35	Jakarta Selatan	Jagakarsa	0	0	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	5	5	5	5
36	Jakarta Selatan	Pesanggrahan	0	0	1	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	0	0	2	5	3	3
37	Jakarta Utara	Penjaringan	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	4	5
38	Jakarta Utara	Tanjung Priok	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	4	7	7
39	Jakarta Utara	Koja	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	5	5	4	5
40	Jakarta Utara	Cilincing	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	7	7	7	5
41	Jakarta Utara	Pademangan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3
42	Jakarta Utara	Kelapa Gading	1	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	3
Total			8	9	8	15	24	19	13	18	10	7	9	13	2	0	0	1	1	0	0	0	221	231	236	214



Number of Answer

			2-6-1																			
			How is your sanitary situation now?																			
			Single Choice																			
			1				2				3				4				5			
			Very good				Good				OK				Not good				Bad			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	0	0	0	0	7	5	6	6	0	0	0	0	0	2	1	1	0	0	0	0
2	Jakarta Barat	Taman Sari	0	0	0	1	6	7	6	6	1	0	1	0	1	1	1	1	0	0	0	0
3	Jakarta Barat	Tambora	0	0	0	1	6	10	9	9	3	0	2	1	2	0	0	0	0	1	0	0
4	Jakarta Barat	Kebon Jeruk	0	0	0	1	6	7	6	4	1	0	1	2	0	0	0	0	0	0	0	0
5	Jakarta Barat	Palmerah	0	0	0	1	4	4	5	4	0	1	1	0	2	1	0	1	0	0	0	0
6	Jakarta Barat	Kembangan	0	0	0	0	6	6	6	5	0	0	0	0	0	0	0	1	0	0	0	0
7	Jakarta Barat	Cengkareng	0	0	1	0	3	5	4	3	1	0	0	1	2	1	1	2	0	0	0	0
8	Jakarta Barat	Kalideres	1	0	0	0	0	4	4	4	2	0	0	1	2	1	1	0	0	0	0	0
9	Jakarta Pusat	Gambir	0	0	1	0	2	3	0	4	2	3	3	2	2	0	2	0	0	0	0	0
10	Jakarta Pusat	Kemayoran	0	0	0	1	3	6	4	6	4	2	3	0	1	0	1	1	0	0	0	0
11	Jakarta Pusat	Senen	0	2	0	0	1	2	3	4	3	1	2	1	2	1	1	1	0	0	0	0
12	Jakarta Pusat	Cempaka Putih	0	0	2	0	1	3	1	1	1	0	0	2	1	0	0	0	0	0	0	0
13	Jakarta Pusat	Menteng	0	0	1	0	2	3	3	5	2	2	1	0	1	0	0	0	0	0	0	0
14	Jakarta Pusat	Tanah Abang	0	0	0	0	4	2	5	6	2	5	2	0	1	0	0	1	0	0	0	0
15	Jakarta Pusat	Johar Baru	0	0	0	0	1	1	2	2	3	2	2	1	0	1	0	1	0	0	0	0
16	Jakarta Pusat	Sawah Besar	0	0	0	0	2	4	3	5	0	1	1	0	3	0	1	0	0	0	0	0
17	Jakarta Timur	Matraman	2	0	4	1	2	4	1	5	2	2	1	0	0	0	0	0	0	0	0	0
18	Jakarta Timur	Pulo Gadung	0	0	0	1	4	7	5	4	1	0	2	1	1	0	0	1	1	0	0	0
19	Jakarta Timur	Cakung	0	0	0	0	6	5	6	4	0	2	1	3	1	0	0	0	0	0	0	0
20	Jakarta Timur	Jatinegara	0	0	1	1	7	7	7	7	1	1	0	0	0	0	0	0	0	0	0	0
21	Jakarta Timur	Kramat	0	0	3	3	6	5	4	3	0	1	0	1	0	1	0	0	1	0	0	0
22	Jakarta Timur	Pasar Rebo	0	2	1	1	4	3	3	4	1	0	0	0	0	0	1	0	0	0	0	0
23	Jakarta Timur	Duren Sawit	0	0	0	1	5	5	6	5	1	1	0	0	0	0	0	0	0	0	0	0
24	Jakarta Timur	Makasar	0	1	0	1	4	2	5	2	1	2	0	1	0	0	0	1	0	0	0	0
25	Jakarta Timur	Ciracas	1	2	0	2	1	2	1	1	2	1	4	2	1	0	0	0	0	0	0	0
26	Jakarta Timur	Cipayung	0	1	1	0	8	7	7	7	0	0	0	1	0	0	0	0	0	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	1	2	0	5	5	3	1	1	0	1	0	0	0	0	0	0	0	0	0
27	Jakarta Selatan	Tebet	0	0	0	1	3	5	7	5	4	1	0	1	0	1	0	0	0	0	0	0
28	Jakarta Selatan	Setia Budi	0	0	0	0	2	4	6	8	3	2	2	0	3	2	0	0	0	0	0	0
29	Jakarta Selatan	Mampang Prapatan	2	1	2	1	3	3	3	4	0	0	0	0	0	1	0	0	0	0	0	0
30	Jakarta Selatan	Pasar Minggu	1	0	0	0	5	3	5	7	0	1	0	0	1	3	2	0	0	0	0	0
31	Jakarta Selatan	Kebayoran Lama	0	0	0	0	6	6	6	5	0	0	0	1	0	0	0	0	0	0	0	0
32	Jakarta Selatan	Cilandak	1	2	1	0	3	3	4	5	0	0	0	0	1	0	0	0	0	0	0	0
33	Jakarta Selatan	Kebayoran Baru	1	1	2	1	8	9	6	9	0	0	1	0	1	0	1	0	0	0	0	0
34	Jakarta Selatan	Pancoran	0	0	1	2	5	5	4	4	1	1	0	0	0	0	1	0	0	0	0	0
35	Jakarta Selatan	Jagakarsa	1	1	1	1	3	4	5	4	0	0	0	1	2	1	0	0	0	0	0	0
36	Jakarta Selatan	Pesanggrahan	0	0	0	1	4	4	4	4	0	1	1	0	1	0	0	0	0	0	0	0
37	Jakarta Utara	Penjaringan	0	0	0	1	1	3	1	2	1	0	1	2	3	1	3	0	0	1	0	0
38	Jakarta Utara	Tanjung Priok	0	0	2	1	3	3	4	3	1	2	1	2	2	1	0	1	1	1	0	0
39	Jakarta Utara	Koja	0	0	1	0	4	3	3	5	1	2	0	1	1	1	2	0	0	0	0	0
40	Jakarta Utara	Cilincing	0	1	0	1	4	4	6	6	2	1	0	0	1	1	1	0	0	0	0	0
41	Jakarta Utara	Pademangan	1	0	0	0	1	1	1	2	0	1	0	1	0	1	2	0	1	0	0	0
42	Jakarta Utara	Kelapa Gading	0	0	0	0	1	1	3	3	0	1	0	0	1	1	0	0	1	0	0	0
Total			11	15	27	26	162	185	183	193	48	40	34	29	40	23	22	13	5	3	0	0

Number of Answer

			2-6-2																				
			What are the reasons to choose 4) or 5) in the Question 2-6-1(for only respondents answering as 4) or 5) in 2-6-1)??																				
			Multiple Choice																				
			1				2				3				4				5				
			Mosquitoes				Flies				Mice				Suffering diarrhea frequently				Others				
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	
1	Jakarta Barat	Grogol Petamburan	0	1	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0
2	Jakarta Barat	Taman Sari	1	1	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
3	Jakarta Barat	Tambora	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
4	Jakarta Barat	Kebon Jeruk	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Jakarta Barat	Palmerah	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	1	0	0	0	0	0
6	Jakarta Barat	Kembangan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7	Jakarta Barat	Cengkareng	2	1	0	1	1	0	0	1	1	0	1	1	0	0	0	0	0	1	0	0	1
8	Jakarta Barat	Kalideres	1	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0
9	Jakarta Pusat	Gambir	0	0	1	0	1	0	1	0	1	0	0	0	1	0	0	0	1	0	1	0	0
10	Jakarta Pusat	Kenayoran	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	1	1	0	0	0	0
11	Jakarta Pusat	Senen	2	1	1	0	1	1	1	0	1	1	1	0	0	1	0	0	1	0	1	0	1
12	Jakarta Pusat	Cempaka Putih	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
13	Jakarta Pusat	Menteng	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Jakarta Pusat	Tanah Abang	0	0	0	0	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	1
15	Jakarta Pusat	Johar Baru	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
16	Jakarta Pusat	Sawah Besar	2	0	1	1	1	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0
17	Jakarta Timur	Matraman	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Jakarta Timur	Pulo Gadung	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0
19	Jakarta Timur	Cakung	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Jakarta Timur	Jatinegara	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
21	Jakarta Timur	Kramat	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0
22	Jakarta Timur	Pasar Rebo	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
23	Jakarta Timur	Duren Sawit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Jakarta Timur	Makasar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Jakarta Timur	Ciracas	1	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0
26	Jakarta Timur	Cipayung	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
27	Jakarta Selatan	Tebet	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0
28	Jakarta Selatan	Setia Budi	1	0	0	0	3	1	0	1	2	1	0	0	0	0	0	0	2	1	0	0	0
29	Jakarta Selatan	Mampang Prapatan	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
30	Jakarta Selatan	Pasar Minggu	0	3	0	0	0	1	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0
31	Jakarta Selatan	Kebayoran Lama	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
32	Jakarta Selatan	Cilandak	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
33	Jakarta Selatan	Kebayoran Baru	0	0	1	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0
34	Jakarta Selatan	Pancoran	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
35	Jakarta Selatan	Jagakarsa	2	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
36	Jakarta Selatan	Pesanggrahan	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
37	Jakarta Utara	Penjaringan	3	2	1	2	1	2	0	0	2	2	1	0	2	1	1	0	0	0	0	0	0
38	Jakarta Utara	Tanjung Priok	3	2	0	0	2	0	1	0	2	1	0	1	1	1	0	0	0	0	0	0	1
39	Jakarta Utara	Koja	1	1	2	0	1	1	1	0	1	1	2	0	1	0	0	0	0	0	0	0	0
40	Jakarta Utara	Cilincing	1	1	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
41	Jakarta Utara	Pademangan	1	0	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0
42	Jakarta Utara	Kelapa Gading	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Total			28	17	13	6	16	9	11	10	27	17	13	5	14	3	1	2	7	8	2	5	

Number of Answer

2-6-3																			
How do you think about the improvement of your sanitary situation?																			
Single Choice																			
		1				2				3				4					
		I want to improve by my own money				I want to cooperate with the improvement work by the government even though I should pay some money.				I want to cooperate with the improvement work by the government if I do not need to pay any money.				I do not want to cooperate with the improvement work by the government.					
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	
1	Jakarta Barat	Grogol Petamburan	3	4	4	4	0	1	1	2	3	1	2	1	1	1	0	0	
2	Jakarta Barat	Taman Sari	4	4	4	7	0	2	2	1	0	1	0	0	4	1	2	0	
3	Jakarta Barat	Tambora	6	5	5	10	0	1	3	0	2	3	1	1	3	2	2	0	
4	Jakarta Barat	Kebon Jeruk	3	5	5	5	1	1	2	2	2	1	0	0	1	0	0	0	
5	Jakarta Barat	Palmerah	2	1	2	3	0	0	3	1	4	5	1	2	0	0	0	0	
6	Jakarta Barat	Kembangan	3	4	6	4	0	0	0	1	3	2	0	1	0	0	0	0	
7	Jakarta Barat	Cengkareng	2	3	3	1	2	1	0	4	2	2	3	1	0	0	0	0	
8	Jakarta Barat	Kalideres	1	2	2	1	2	2	3	2	2	1	0	2	0	0	0	0	
9	Jakarta Pusat	Gambir	0	0	1	2	1	2	2	2	5	4	3	2	0	0	0	0	
10	Jakarta Pusat	Kemayoran	0	2	1	2	2	4	6	3	6	2	1	3	0	0	0	0	
11	Jakarta Pusat	Senen	0	0	0	1	1	2	2	4	5	4	4	1	0	0	0	0	
12	Jakarta Pusat	Cempaka Putih	0	1	1	1	0	1	0	1	3	1	2	1	0	0	0	0	
13	Jakarta Pusat	Menteng	1	0	3	3	2	3	1	1	2	2	1	1	0	0	0	0	
14	Jakarta Pusat	Tanah Abang	0	0	3	3	1	4	4	2	6	3	0	2	0	0	0	0	
15	Jakarta Pusat	Johar Baru	0	0	0	0	0	0	4	1	4	4	0	2	0	0	0	1	
16	Jakarta Pusat	Sawah Besar	0	1	1	3	2	1	3	2	3	3	1	0	0	0	0	0	
17	Jakarta Timur	Matraman	4	3	4	4	0	1	2	1	2	2	0	1	0	0	0	0	
18	Jakarta Timur	Pulo Gadung	1	4	3	1	2	3	3	1	4	0	1	5	0	0	0	0	
19	Jakarta Timur	Cakung	0	1	3	2	4	5	4	4	3	1	0	1	0	0	0	0	
20	Jakarta Timur	Jatinegara	3	3	4	4	4	3	3	4	1	2	1	0	0	0	0	0	
21	Jakarta Timur	Kramat	0	0	1	1	2	4	5	5	5	3	1	0	0	0	0	1	
22	Jakarta Timur	Pasar Rebo	0	0	1	2	3	5	3	2	2	0	1	1	0	0	0	0	
23	Jakarta Timur	Duren Sawit	1	2	5	3	4	4	1	3	1	0	0	0	0	0	0	0	
24	Jakarta Timur	Makasar	2	1	2	2	1	2	1	3	2	2	2	0	0	0	0	0	
25	Jakarta Timur	Ciracas	0	2	1	2	4	1	4	2	1	2	0	1	0	0	0	0	
26	Jakarta Timur	Cipayung	2	1	1	2	2	4	6	5	4	3	1	1	0	0	0	0	
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	2	4	4	1	3	2	1	0	1	0	1	0	0	0	0	0	
27	Jakarta Selatan	Tebet	0	2	2	3	3	3	4	4	4	2	1	1	0	0	0	0	
28	Jakarta Selatan	Setia Budi	1	1	4	2	1	4	4	4	6	3	0	2	0	0	0	0	
29	Jakarta Selatan	Mampang Prapatan	1	1	3	3	0	2	0	0	4	2	2	2	0	0	0	0	
30	Jakarta Selatan	Pasar Minggu	2	1	2	5	1	3	1	2	4	3	3	0	0	1	0	0	
31	Jakarta Selatan	Kebayoran Lama	3	4	6	1	1	0	2	2	2	1	0	3	0	0	0	0	
32	Jakarta Selatan	Cilandak	2	2	4	2	0	1	0	1	3	2	1	2	0	0	0	0	
33	Jakarta Selatan	Kebayoran Baru	3	8	10	9	0	2	0	1	7	0	0	0	0	0	0	0	
34	Jakarta Selatan	Pancoran	1	1	3	3	1	2	2	1	4	3	1	2	0	0	0	0	
35	Jakarta Selatan	Jagakarsa	0	2	1	3	3	0	2	2	2	4	3	0	1	0	0	1	
36	Jakarta Selatan	Pesanggrahan	3	1	3	2	0	2	1	3	2	2	1	0	0	0	0	0	
37	Jakarta Utara	Penjaringan	2	2	5	3	1	2	0	2	2	1	0	0	0	0	0	0	
38	Jakarta Utara	Tanjung Priok	2	3	4	3	1	3	2	3	4	1	1	1	0	0	0	0	
39	Jakarta Utara	Koja	2	1	1	3	2	1	3	1	2	4	2	2	0	0	0	0	
40	Jakarta Utara	Ciincing	4	3	4	6	1	1	2	1	2	3	1	0	0	0	0	0	
41	Jakarta Utara	Pademangan	1	0	1	2	1	2	1	0	1	1	1	1	0	0	0	0	
42	Jakarta Utara	Kelapa Gading	1	1	1	1	1	2	2	2	1	0	0	0	0	0	0	0	
Total			68	86	124	124	60	90	93	88	128	86	44	46	10	4	5	3	

Number of Answer

		2-6-4												
		Do you know about PD PAL JAYA?												
		Single Choice												
		1				2				3				
		Yes, I know the name and its work.				I know just a name.				I do not know.				
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	0	0	1	1	1	1	0	5	6	6	6	1
2	Jakarta Barat	Taman Sari	0	2	2	3	2	2	0	3	6	4	6	2
3	Jakarta Barat	Tambora	0	2	0	2	0	3	5	5	11	6	6	4
4	Jakarta Barat	Kebon Jeruk	0	0	1	2	0	2	2	2	7	5	4	3
5	Jakarta Barat	Palmerah	0	1	1	2	2	2	2	2	4	3	3	2
6	Jakarta Barat	Kembangan	0	0	1	0	0	2	3	2	6	4	2	4
7	Jakarta Barat	Cengkareng	0	0	2	2	1	0	0	4	5	6	4	0
8	Jakarta Barat	Kalideres	0	1	3	1	1	2	1	3	4	2	1	1
9	Jakarta Pusat	Gambir	0	1	0	2	2	0	4	3	4	5	2	1
10	Jakarta Pusat	Kemayoran	0	2	0	3	2	3	8	4	6	3	0	1
11	Jakarta Pusat	Senen	0	1	2	2	1	4	2	3	5	1	2	1
12	Jakarta Pusat	Cempaka Putih	0	0	1	2	1	1	0	1	2	2	2	0
13	Jakarta Pusat	Menteng	0	1	1	0	2	0	3	3	3	4	1	2
14	Jakarta Pusat	Tanah Abang	0	2	1	3	3	3	4	4	4	2	2	0
15	Jakarta Pusat	Johar Baru	0	0	0	2	0	2	3	1	4	2	1	1
16	Jakarta Pusat	Sawah Besar	0	0	0	2	0	0	0	2	5	5	5	1
17	Jakarta Timur	Matraman	1	0	1	0	0	1	2	3	5	5	3	3
18	Jakarta Timur	Pulo Gadung	0	0	0	1	1	2	1	5	6	5	6	1
19	Jakarta Timur	Cakung	0	0	0	0	1	3	0	5	6	4	7	2
20	Jakarta Timur	Jatinegara	1	1	2	2	2	2	1	2	5	5	5	4
21	Jakarta Timur	Kramat	0	1	0	1	2	2	3	3	5	4	4	3
22	Jakarta Timur	Pasar Rebo	0	0	2	4	3	1	2	1	2	4	1	0
23	Jakarta Timur	Duren Sawit	0	1	0	3	0	1	1	1	6	4	5	2
24	Jakarta Timur	Makasar	0	0	0	1	1	1	0	2	4	4	5	2
25	Jakarta Timur	Ciracas	1	1	2	3	1	3	3	2	3	1	0	0
26	Jakarta Timur	Cipayung	1	1	0	1	1	2	1	1	6	5	7	6
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	4	4	5	1	2	2	0	0	0	0	1	0
27	Jakarta Selatan	Tebet	0	1	1	4	2	4	6	2	5	2	0	1
28	Jakarta Selatan	Setia Budi	2	4	2	3	4	2	2	5	2	2	4	0
29	Jakarta Selatan	Mampang Prapatan	0	0	1	1	4	4	2	3	1	1	2	1
30	Jakarta Selatan	Pasar Minggu	1	1	1	1	2	2	2	4	4	4	4	2
31	Jakarta Selatan	Kebayoran Lama	0	0	0	2	2	3	2	3	4	3	4	1
32	Jakarta Selatan	Cilandak	0	0	1	1	2	1	1	3	3	4	3	1
33	Jakarta Selatan	Kebayoran Baru	0	2	1	3	4	3	5	3	6	5	4	4
34	Jakarta Selatan	Pancoran	0	2	0	0	1	0	3	3	5	4	3	3
35	Jakarta Selatan	Jagakarsa	1	1	2	0	1	3	3	4	4	2	1	2
36	Jakarta Selatan	Pesanggrahan	1	3	1	0	0	1	2	4	4	1	2	1
37	Jakarta Utara	Penjaringan	0	0	1	1	0	0	1	0	5	5	3	4
38	Jakarta Utara	Tanjung Priok	0	0	1	0	0	1	1	2	7	6	5	5
39	Jakarta Utara	Koja	1	1	1	3	0	1	0	0	5	4	5	3
40	Jakarta Utara	Ciincing	0	0	0	2	0	0	1	4	7	7	6	1
41	Jakarta Utara	Pademangan	0	0	1	2	0	0	0	1	3	3	2	0
42	Jakarta Utara	Kelapa Gading	0	1	0	2	0	0	1	0	3	2	2	1
Total			14	38	42	71	54	72	83	113	198	156	141	77

Number of Answer

2-6-5																																
Do you know which organizations involve for sewage service?																																
Multiple Choice																																
			1				2				3				4				5				6				7					
			PD PAL JAYA				Cleansing agency of DKI Jakarta				Housing agency of DKI Jakarta				Public works of DKI Jakarta				Private company				NGOs (Non-governmental organization)				Community					
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K		
1	Jakarta Barat	Grogol Petamburan	0	1	1	3	6	5	4	5	0	0	0	0	0	1	1	1	0	0	1	1	0	1	0	1	0	1	1	1	0	
2	Jakarta Barat	Taman Sari	0	1	2	4	5	4	5	5	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	3	3	3	1
3	Jakarta Barat	Tambora	1	1	0	2	3	4	5	9	0	0	0	2	0	0	0	2	3	1	2	2	1	0	0	2	4	5	4	2		
4	Jakarta Barat	Kebon Jeruk	0	2	1	1	0	1	4	6	0	0	0	0	0	1	0	2	2	0	2	2	0	0	0	1	5	4	1	1		
5	Jakarta Barat	Palmerah	1	3	0	0	5	3	4	4	0	1	1	0	0	0	2	3	0	0	0	0	1	0	0	0	1	2	1	1		
6	Jakarta Barat	Kembangan	0	1	1	2	2	2	4	4	1	0	0	0	0	0	0	1	1	0	0	1	0	1	0	2	3	2	3	1		
7	Jakarta Barat	Cengkareng	1	0	3	2	4	4	2	4	1	0	0	0	2	0	1	1	0	0	0	1	0	0	0	0	2	2	1	0		
8	Jakarta Barat	Kalideres	0	1	1	1	4	4	2	3	0	0	0	0	0	0	0	0	0	1	0	0	1	2	1	1	2	1	0	0		
9	Jakarta Pusat	Gambir	1	2	1	2	5	3	5	5	0	0	0	1	1	1	0	1	0	0	0	2	0	0	0	0	1	1	0	0		
10	Jakarta Pusat	Kemayoran	0	2	2	5	7	5	6	5	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0		
11	Jakarta Pusat	Senen	0	2	0	2	5	4	4	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	1	1		
12	Jakarta Pusat	Cempaka Putih	1	0	0	1	0	3	1	2	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	
13	Jakarta Pusat	Menteng	0	1	2	2	5	3	4	4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
14	Jakarta Pusat	Tanah Abang	0	3	0	4	3	3	6	4	1	0	0	1	1	1	1	0	2	0	0	0	0	0	0	2	0	0	0	0		
15	Jakarta Pusat	Johar Baru	0	0	0	2	2	2	4	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0		
16	Jakarta Pusat	Sawah Besar	0	0	0	4	4	3	4	3	1	0	0	0	2	2	2	2	0	0	0	1	0	0	0	1	0	0	0	0		
17	Jakarta Timur	Matraman	1	1	1	1	5	5	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0		
18	Jakarta Timur	Pulo Gadung	1	3	0	2	6	5	5	4	0	0	0	0	3	1	1	1	0	0	1	0	1	0	1	0	0	2	1	0	0	
19	Jakarta Timur	Cakung	1	1	1	1	5	5	5	6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0		
20	Jakarta Timur	Jatinegara	2	2	3	2	5	5	6	7	0	0	1	0	0	0	1	1	0	0	1	1	0	0	1	0	1	0	0	0	0	
21	Jakarta Timur	Kramat	1	1	3	3	6	6	5	4	0	0	1	0	0	1	1	0	0	0	2	0	0	0	1	0	0	0	0	0	0	
22	Jakarta Timur	Pasar Rebo	2	0	4	4	3	4	2	3	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	1	1	0	0	0	
23	Jakarta Timur	Duren Sawit	0	1	0	3	5	3	4	4	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	
24	Jakarta Timur	Makasar	1	1	0	2	4	4	5	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	
25	Jakarta Timur	Ciracas	1	2	2	2	5	2	5	5	0	0	0	1	1	0	0	1	1	0	0	1	0	0	0	0	0	1	1	1	1	
26	Jakarta Timur	Cipayung	1	2	0	2	7	7	6	8	0	0	1	0	0	1	1	0	1	0	2	0	0	0	1	0	1	1	0	0	0	
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	6	5	5	1	4	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	
27	Jakarta Selatan	Tebet	0	2	2	5	6	6	7	5	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
28	Jakarta Selatan	Setia Budi	3	4	2	6	5	5	6	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Jakarta Selatan	Mampang Prapatan	0	1	2	1	2	4	3	4	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
30	Jakarta Selatan	Pasar Minggu	2	2	4	4	4	3	3	3	1	0	0	0	1	2	0	0	1	3	0	0	0	0	1	1	0	0	1	0	1	
31	Jakarta Selatan	Kebayoran Lama	2	2	2	3	5	4	5	4	0	0	0	2	0	1	0	1	1	2	0	2	0	0	0	1	0	0	0	0	0	
32	Jakarta Selatan	Cilandak	1	0	2	2	3	3	3	4	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	1	0	1	
33	Jakarta Selatan	Kebayoran Baru	2	4	6	5	8	9	5	9	2	2	0	0	0	2	0	0	0	2	1	0	0	1	1	1	0	2	0	2	2	
34	Jakarta Selatan	Pancoran	1	2	0	2	5	5	5	3	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	
35	Jakarta Selatan	Jagakarsa	2	2	2	2	5	4	4	4	0	0	0	1	0	1	0	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0
36	Jakarta Selatan	Pesanggrahan	0	4	4	3	5	2	2	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0
37	Jakarta Utara	Penjaringan	0	0	1	1	1	3	1	4	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	3	2	2	0	0	
38	Jakarta Utara	Tanjung Priok	0	0	1	0	5	6	5	6	0	0	0	0	0	0	0	0	1	1	2	2	0	0	0	0	1	0	1	0	0	
39	Jakarta Utara	Koja	0	0	1	3	5	5	3	4	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	3	0	1	0	0	0	
40	Jakarta Utara	Cilincing	0	0	0	3	5	5	6	5	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	3	0	2	0	0	
41	Jakarta Utara	Pademangan	0	0	1	2	1	1	3	1	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	2	0	0	0	0	
42	Jakarta Utara	Kelapa Gading	0	1	0	2	2	3	1	2	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Total			35	63	63	104	182	169	173	186	9	4	6	10	16	22	17	23	16	21	20	20	4	7	9	11	45	35	32	13	0	

Only for Leaders  
Number of Answer

			2-7-1	
			Does your community have MCK or public toilets?	
			Single Choice	
			1	2
No.	Wilayah	Kecamatan	Yes	No
1	Jakarta Barat	Grogol Petamburan	4	3
2	Jakarta Barat	Taman Sari	6	2
3	Jakarta Barat	Tambora	9	2
4	Jakarta Barat	Kebon Jeruk	1	6
5	Jakarta Barat	Palmerah	0	6
6	Jakarta Barat	Kembangan	0	6
7	Jakarta Barat	Cengkareng	3	3
8	Jakarta Barat	Kalideres	1	4
9	Jakarta Pusat	Gambir	6	0
10	Jakarta Pusat	Kemayoran	6	2
11	Jakarta Pusat	Senen	6	0
12	Jakarta Pusat	Cempaka Putih	0	3
13	Jakarta Pusat	Menteng	5	0
14	Jakarta Pusat	Tanah Abang	6	1
15	Jakarta Pusat	Johar Baru	4	0
16	Jakarta Pusat	Sawah Besar	5	0
17	Jakarta Timur	Matraman	3	3
18	Jakarta Timur	Pulo Gadung	6	1
19	Jakarta Timur	Cakung	3	4
20	Jakarta Timur	Jatinegara	8	0
21	Jakarta Timur	Kramat	1	6
22	Jakarta Timur	Pasar Rebo	0	5
23	Jakarta Timur	Duren Sawit	1	5
24	Jakarta Timur	Makasar	1	4
25	Jakarta Timur	Ciracas	0	5
26	Jakarta Timur	Cipayang	0	8
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	1	0
27	Jakarta Selatan	Tebet	7	0
28	Jakarta Selatan	Setia Budi	6	2
29	Jakarta Selatan	Mampang Prapatan	3	2
30	Jakarta Selatan	Pasar Minggu	3	4
31	Jakarta Selatan	Kebayoran Lama	5	1
32	Jakarta Selatan	Cilandak	3	2
33	Jakarta Selatan	Kebayoran Baru	7	3
34	Jakarta Selatan	Pancoran	2	4
35	Jakarta Selatan	Jagakarsa	0	6
36	Jakarta Selatan	Pesanggrahan	3	2
37	Jakarta Utara	Penjaringan	5	0
38	Jakarta Utara	Tanjung Priok	6	1
39	Jakarta Utara	Koja	4	2
40	Jakarta Utara	Cilincing	5	2
41	Jakarta Utara	Pademangan	3	0
42	Jakarta Utara	Kelapa Gading	1	2
Total			149	112

Only for Leaders  
Number of Answer

		2-7-2			
		How many places (numbers) of MCK, toilets of MCK, or public toilets in your community (for only respondents answering as Yes in 2-7-1)?			
		Free			
		1	2	3	
No.	Wilayah	Kecamatan	MCK	Toilet in MCK	Public Toilet
1	Jakarta Barat	Grogol Petamburan	10	18	0
2	Jakarta Barat	Taman Sari	26	1	5
3	Jakarta Barat	Tambora	64	4	0
4	Jakarta Barat	Kebon Jeruk	3	0	0
5	Jakarta Barat	Palmerah	0	0	0
6	Jakarta Barat	Kembangan	0	0	0
7	Jakarta Barat	Cengkareng	23	10	0
8	Jakarta Barat	Kalkderes	2	0	0
9	Jakarta Pusat	Gambir	42	15	0
10	Jakarta Pusat	Kemayoran	47	0	0
11	Jakarta Pusat	Senen	30	0	1
12	Jakarta Pusat	Cempaka Putih	0	0	0
13	Jakarta Pusat	Menteng	38	1	8
14	Jakarta Pusat	Tanah Abang	47	0	0
15	Jakarta Pusat	Johar Baru	37	18	3
16	Jakarta Pusat	Sawah Besar	41	83	2
17	Jakarta Timur	Matraman	12	8	12
18	Jakarta Timur	Pulo Gadung	8	5	4
19	Jakarta Timur	Cakung	11	4	0
20	Jakarta Timur	Jatinegara	104	74	81
21	Jakarta Timur	Kramat	1	0	0
22	Jakarta Timur	Pasar Rebo	0	0	0
23	Jakarta Timur	Duren Sawit	6	4	3
24	Jakarta Timur	Makasar	24	15	9
25	Jakarta Timur	Ciracas	0	0	0
26	Jakarta Timur	Cipayung	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	1	2	0
27	Jakarta Selatan	Tebet	42	3	3
28	Jakarta Selatan	Setia Budi	16	20	0
29	Jakarta Selatan	Mampang Prapatan	24	22	0
30	Jakarta Selatan	Pasar Minggu	4	3	0
31	Jakarta Selatan	Kebayoran Lama	32	37	5
32	Jakarta Selatan	Cilandak	11	9	0
33	Jakarta Selatan	Kebayoran Baru	42	46	0
34	Jakarta Selatan	Pancoran	3	9	1
35	Jakarta Selatan	Jagakarsa	0	0	0
36	Jakarta Selatan	Pesanggrahan	7	0	0
37	Jakarta Utara	Penjaringan	26	72	22
38	Jakarta Utara	Tanjung Priok	35	83	0
39	Jakarta Utara	Koja	13	42	0
40	Jakarta Utara	Cilincing	12	16	10
41	Jakarta Utara	Pademangan	18	54	0
42	Jakarta Utara	Kelapa Gading	10	25	0
Total			872	703	169

Only for Leaders  
Number of Answer

			2-7-3				
			Which organization built the MCK or public toilets (for only respondents answering as Yes in 2-7-1)?				
			Multiple choice				
			1	2	3	4	5
No.	Wilayah	Kecamatan	Public agency (public works sector)	Public agency (health service sector)	Public agency (other sectors)	International donors	Others
1	Jakarta Barat	Grogol Petamburan	1	0	0	0	3
2	Jakarta Barat	Taman Sari	0	1	3	0	2
3	Jakarta Barat	Tambora	2	0	0	2	5
4	Jakarta Barat	Kebon Jeruk	1	0	0	0	0
5	Jakarta Barat	Palmerah	0	0	0	0	0
6	Jakarta Barat	Kembangan	0	0	0	0	0
7	Jakarta Barat	Cengkareng	1	0	1	0	1
8	Jakarta Barat	Kalideres	1	0	0	0	0
9	Jakarta Pusat	Gambir	0	0	6	0	0
10	Jakarta Pusat	Kemayoran	0	2	4	0	0
11	Jakarta Pusat	Senen	3	0	2	0	1
12	Jakarta Pusat	Cempaka Putih	0	0	0	0	0
13	Jakarta Pusat	Menteng	2	0	3	0	0
14	Jakarta Pusat	Tanah Abang	0	1	5	0	0
15	Jakarta Pusat	Johar Baru	0	0	4	0	0
16	Jakarta Pusat	Sawah Besar	1	0	2	1	1
17	Jakarta Timur	Matraman	3	0	0	0	0
18	Jakarta Timur	Pulo Gadung	1	3	1	0	1
19	Jakarta Timur	Cakung	1	0	1	0	1
20	Jakarta Timur	Jatinegara	2	1	3	0	2
21	Jakarta Timur	Kramat	1	0	0	0	0
22	Jakarta Timur	Pasar Rebo	0	0	0	0	0
23	Jakarta Timur	Duren Sawit	0	0	1	0	0
24	Jakarta Timur	Makasar	0	0	0	0	1
25	Jakarta Timur	Ciracas	0	0	0	0	0
26	Jakarta Timur	Cipayung	0	0	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	1
27	Jakarta Selatan	Tebet	0	0	7	0	0
28	Jakarta Selatan	Setia Budi	0	0	4	1	1
29	Jakarta Selatan	Manpang Prapatan	0	0	2	0	1
30	Jakarta Selatan	Pasar Minggu	1	0	1	0	1
31	Jakarta Selatan	Kebayoran Lama	1	0	0	0	4
32	Jakarta Selatan	Cilandak	1	2	0	0	0
33	Jakarta Selatan	Kebayoran Baru	2	0	2	1	2
34	Jakarta Selatan	Pancoran	2	0	0	0	0
35	Jakarta Selatan	Jagakarsa	0	0	0	0	0
36	Jakarta Selatan	Pesanggrahan	1	2	0	0	0
37	Jakarta Utara	Penjaringan	0	0	2	0	3
38	Jakarta Utara	Tanjung Priok	0	1	2	0	3
39	Jakarta Utara	Koja	1	0	2	0	1
40	Jakarta Utara	Cilincing	0	2	0	0	3
41	Jakarta Utara	Pademangan	0	0	1	0	2
42	Jakarta Utara	Kelapa Gading	0	0	1	0	0
Total			29	15	60	5	40



Only for Leaders  
Number of Answer

			2-7-4				
			What was the role of the community to build MCK or public toilets (for only respondents answering as Yes in 2-7-1)?				
			Multiple choice				
			1	2	3	4	5
No.	Wilayah	Kecamatan	Provide a land	Planning and designing	Cooperation with construction (such as dispatch of workers)	Nothing	Others
1	Jakarta Barat	Grogol Petamburan	2	0	1	0	2
2	Jakarta Barat	Taman Sari	3	1	4	1	0
3	Jakarta Barat	Tambora	4	0	3	1	3
4	Jakarta Barat	Kebon Jeruk	1	0	0	0	0
5	Jakarta Barat	Palmerah	0	0	0	0	0
6	Jakarta Barat	Kembangan	0	0	0	0	0
7	Jakarta Barat	Cengkareng	1	1	1	0	1
8	Jakarta Barat	Kalideres	1	0	0	0	0
9	Jakarta Pusat	Gambir	3	0	2	0	1
10	Jakarta Pusat	Kemayoran	2	0	3	1	0
11	Jakarta Pusat	Senen	3	0	3	1	0
12	Jakarta Pusat	Cempaka Putih	0	0	0	0	0
13	Jakarta Pusat	Menteng	3	0	1	1	0
14	Jakarta Pusat	Tanah Abang	2	0	3	1	0
15	Jakarta Pusat	Johar Baru	2	0	1	1	0
16	Jakarta Pusat	Sawah Besar	1	2	2	1	0
17	Jakarta Timur	Matraman	1	1	1	1	0
18	Jakarta Timur	Pulo Gadung	2	1	4	0	0
19	Jakarta Timur	Cakung	1	0	2	0	0
20	Jakarta Timur	Jatinegara	6	1	4	0	0
21	Jakarta Timur	Kramat	0	0	1	0	0
22	Jakarta Timur	Pasar Rebo	0	0	0	0	0
23	Jakarta Timur	Duren Sawit	0	0	1	0	0
24	Jakarta Timur	Makasar	0	0	1	0	0
25	Jakarta Timur	Ciracas	0	0	0	0	0
26	Jakarta Timur	Cipayung	0	0	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	1	0	0
27	Jakarta Selatan	Tebet	3	0	3	0	2
28	Jakarta Selatan	Setia Budi	4	0	1	0	2
29	Jakarta Selatan	Mampang Prapatan	3	0	1	0	0
30	Jakarta Selatan	Pasar Minggu	1	1	1	0	0
31	Jakarta Selatan	Kebayoran Lama	1	0	3	1	0
32	Jakarta Selatan	Cilandak	2	1	1	1	0
33	Jakarta Selatan	Kebayoran Baru	4	1	1	1	1
34	Jakarta Selatan	Pancoran	1	0	1	0	0
35	Jakarta Selatan	Jagakarsa	0	0	0	0	0
36	Jakarta Selatan	Pesanggrahan	2	0	2	0	0
37	Jakarta Utara	Penjaringan	2	2	3	1	1
38	Jakarta Utara	Tanjung Priok	4	3	3	0	0
39	Jakarta Utara	Koja	3	0	0	1	0
40	Jakarta Utara	Cilincing	5	1	2	0	0
41	Jakarta Utara	Pademangan	2	1	1	0	0
42	Jakarta Utara	Kelapa Gading	1	0	0	0	0
Total			76	17	62	14	13

Only for Leaders  
Number of Answer

			2-7-5				
			Who manage the MCK or public toilets in your community (for only respondents answering as Yes in 2-7-1)?				
			Single choice				
			1	2	3	4	5
No.	Wilayah	Kecamatan	Community leader	A person in charge of MCK or public toilets in the community	Local public officer	Investor	Others
1	Jakarta Barat	Grogol Petamburan	1	2	1	0	0
2	Jakarta Barat	Taman Sari	0	6	0	0	0
3	Jakarta Barat	Tambora	1	8	0	0	0
4	Jakarta Barat	Kebon Jeruk	0	1	0	0	0
5	Jakarta Barat	Palmerah	0	0	0	0	0
6	Jakarta Barat	Kembangan	0	0	0	0	0
7	Jakarta Barat	Cengkareng	1	2	0	0	0
8	Jakarta Barat	Kalideres	0	1	0	0	0
9	Jakarta Pusat	Gambir	0	6	0	0	0
10	Jakarta Pusat	Kemayoran	0	5	0	0	1
11	Jakarta Pusat	Senen	0	6	0	0	0
12	Jakarta Pusat	Cempaka Putih	0	0	0	0	0
13	Jakarta Pusat	Menteng	0	5	0	0	0
14	Jakarta Pusat	Tanah Abang	0	6	0	0	0
15	Jakarta Pusat	Johar Baru	1	3	0	0	0
16	Jakarta Pusat	Sawah Besar	2	3	0	0	0
17	Jakarta Timur	Matraman	2	1	0	0	0
18	Jakarta Timur	Pulo Gadung	1	5	0	0	0
19	Jakarta Timur	Cakung	3	0	0	0	0
20	Jakarta Timur	Jatinegara	0	8	0	0	0
21	Jakarta Timur	Kramat	1	0	0	0	0
22	Jakarta Timur	Pasar Rebo	0	0	0	0	0
23	Jakarta Timur	Duren Sawit	0	1	0	0	0
24	Jakarta Timur	Makasar	0	1	0	0	0
25	Jakarta Timur	Ciracas	0	0	0	0	0
26	Jakarta Timur	Cipayung	0	0	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	1
27	Jakarta Selatan	Tebet	0	7	0	0	0
28	Jakarta Selatan	Setia Budi	1	5	0	0	0
29	Jakarta Selatan	Mampang Prapatan	0	2	0	0	1
30	Jakarta Selatan	Pasar Minggu	0	1	0	0	2
31	Jakarta Selatan	Kebayoran Lama	1	1	0	3	0
32	Jakarta Selatan	Cilandak	0	1	1	0	1
33	Jakarta Selatan	Kebayoran Baru	3	0	0	1	3
34	Jakarta Selatan	Pancoran	0	2	0	0	0
35	Jakarta Selatan	Jagakarsa	0	0	0	0	0
36	Jakarta Selatan	Pesanggrahan	1	1	0	0	1
37	Jakarta Utara	Penjaringan	0	4	1	0	0
38	Jakarta Utara	Tanjung Priok	1	5	0	0	0
39	Jakarta Utara	Koja	2	1	1	0	0
40	Jakarta Utara	Cilincing	1	4	0	0	0
41	Jakarta Utara	Pademangan	0	3	0	0	0
42	Jakarta Utara	Kelapa Gading	1	0	0	0	0
Total			24	107	4	4	10

Only for Leaders  
Number of Answer

			2-7-6				
			Who uses the MCK or public toilets in your community (for only				
			Single choice				
No.	Wilayah	Kecamatan	1	2	3	4	5
			All community members	About a half of community members	About one third of community members	Very few community members	Nobody
1	Jakarta Barat	Grogol Petamburan	0	0	2	2	0
2	Jakarta Barat	Taman Sari	0	2	2	2	0
3	Jakarta Barat	Tambora	0	2	4	3	0
4	Jakarta Barat	Kebon Jeruk	0	0	1	0	0
5	Jakarta Barat	Palmerah	0	0	0	0	0
6	Jakarta Barat	Kembangan	0	0	0	0	0
7	Jakarta Barat	Cengkareng	1	1	1	0	0
8	Jakarta Barat	Kalideres	0	0	0	1	0
9	Jakarta Pusat	Gambir	0	1	4	1	0
10	Jakarta Pusat	Kemayoran	0	3	2	1	0
11	Jakarta Pusat	Senen	0	3	3	0	0
12	Jakarta Pusat	Cempaka Putih	0	0	0	0	0
13	Jakarta Pusat	Menteng	0	2	2	1	0
14	Jakarta Pusat	Tanah Abang	1	2	3	0	0
15	Jakarta Pusat	Johar Baru	1	1	2	0	0
16	Jakarta Pusat	Sawah Besar	0	3	2	0	0
17	Jakarta Timur	Matraman	0	1	0	2	0
18	Jakarta Timur	Pulo Gadung	1	1	2	2	0
19	Jakarta Timur	Cakung	3	0	0	0	0
20	Jakarta Timur	Jatinegara	4	1	2	1	0
21	Jakarta Timur	Kramat	1	0	0	0	0
22	Jakarta Timur	Pasar Rebo	0	0	0	0	0
23	Jakarta Timur	Duren Sawit	1	0	0	0	0
24	Jakarta Timur	Makasar	0	0	0	1	0
25	Jakarta Timur	Ciracas	0	0	0	0	0
26	Jakarta Timur	Cipayung	0	0	0	0	0
23*	Jakarta Timur	Duren Sawit (Makaka Sari)	1	0	0	0	0
27	Jakarta Selatan	Tebet	0	2	1	4	0
28	Jakarta Selatan	Setia Budi	0	1	2	3	0
29	Jakarta Selatan	Mampang Prapatan	0	0	0	2	1
30	Jakarta Selatan	Pasar Minggu	0	1	1	1	0
31	Jakarta Selatan	Kebayoran Lama	2	0	0	3	0
32	Jakarta Selatan	Cilandak	1	0	0	2	0
33	Jakarta Selatan	Kebayoran Baru	0	2	0	5	0
34	Jakarta Selatan	Pancoran	0	0	0	2	0
35	Jakarta Selatan	Jagakarsa	0	0	0	0	0
36	Jakarta Selatan	Pesangrahan	1	1	0	1	0
37	Jakarta Utara	Penjaringan	0	0	2	3	0
38	Jakarta Utara	Tanjung Priok	0	2	3	1	0
39	Jakarta Utara	Koja	0	2	1	1	0
40	Jakarta Utara	Cilincing	1	1	0	3	0
41	Jakarta Utara	Pademangan	0	1	2	0	0
42	Jakarta Utara	Kelapa Gading	0	1	0	0	0
Total			19	37	44	48	1

Only for Leaders  
Number of Answer

		2-7-7			
		How much do users pay for the MCK or public toilets (for only respondents answering as Yes in 2-7-1)?			
		Single Choice			
		1	2		
No.	Wilayah	Kecamatan	Free of charge	Charge	Amount of Charge
1	Jakarta Barat	Grogol Petamburan	0	4	Rp. 1000
2	Jakarta Barat	Taman Sari	1	5	Rp. 500 - 1000
3	Jakarta Barat	Tambora	0	9	Rp. 500 - 1000
4	Jakarta Barat	Kebon Jeruk	0	1	Rp. 1000
5	Jakarta Barat	Palmerah	0	0	0
6	Jakarta Barat	Kembangan	0	0	0
7	Jakarta Barat	Cengkareng	1	2	Rp. 1000
8	Jakarta Barat	Kalideres	1	0	0
9	Jakarta Pusat	Gambir	2	3	Rp. 1000
10	Jakarta Pusat	Kemayoran	5	1	0
11	Jakarta Pusat	Senen	4	2	Rp. 1000
12	Jakarta Pusat	Cempaka Putih	0	0	0
13	Jakarta Pusat	Menteng	3	3	Rp. 500 - 1000
14	Jakarta Pusat	Tanah Abang	1	5	Rp. 1000 - 3000
15	Jakarta Pusat	Johar Baru	1	3	Rp. 1000
16	Jakarta Pusat	Sawah Besar	1	4	Rp. 500 - 2000
17	Jakarta Timur	Matraman	2	1	Rp. 1000
18	Jakarta Timur	Pulo Gadung	3	3	Rp. 1000
19	Jakarta Timur	Cakung	0	3	Rp. 1000
20	Jakarta Timur	Jatinegara	4	4	Rp. 1000 - 2000
21	Jakarta Timur	Kramat	0	1	Rp. 1000
22	Jakarta Timur	Pasar Rebo	0	0	0
23	Jakarta Timur	Duren Sawit	1	0	0
24	Jakarta Timur	Makasar	0	1	Rp. 1000
25	Jakarta Timur	Ciracas	0	0	0
26	Jakarta Timur	Cipayung	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	1	0	0
27	Jakarta Selatan	Tebet	3	4	Rp. 1000
28	Jakarta Selatan	Setia Budi	5	1	Rp. 1000
29	Jakarta Selatan	Mampang Prapatan	3	0	0
30	Jakarta Selatan	Pasar Minggu	3	0	0
31	Jakarta Selatan	Kebayoran Lama	2	3	Rp. 1000
32	Jakarta Selatan	Cilandak	3	0	0
33	Jakarta Selatan	Kebayoran Baru	7	0	0
34	Jakarta Selatan	Pancoran	2	0	0
35	Jakarta Selatan	Jagakarsa	0	0	0
36	Jakarta Selatan	Pesanggrahan	2	1	Rp. 1000
37	Jakarta Utara	Penjaringan	0	5	Rp. 1000
38	Jakarta Utara	Tanjung Priok	4	2	Rp. 1000
39	Jakarta Utara	Koja	1	3	Rp. 1000
40	Jakarta Utara	Cilincing	3	2	Rp. 1000
41	Jakarta Utara	Pademangan	1	2	Rp. 1000 - 2000
42	Jakarta Utara	Kelapa Gading	1	0	0
Total			71	78	0

Only for Leaders  
Number of Answer

			2-7-8				
			How do users pay for the MCK or public toilets (for only respondents answering as Yes in 2-7-1)?				
			Single choice				
			1	2	3	4	5
No.	Wilayah	Kecamatan	No rules of fee collection	Manager of MCK or public toilets visits each house and collects the fee.	Each house pay together with other fee.	Community pays from the community fund.	Others
1	Jakarta Barat	Grogol Petamburan	2	0	0	0	2
2	Jakarta Barat	Taman Sari	3	0	0	1	2
3	Jakarta Barat	Tambora	5	0	0	0	4
4	Jakarta Barat	Kebon Jeruk	1	0	0	0	0
5	Jakarta Barat	Palmerah	0	0	0	0	0
6	Jakarta Barat	Kembangan	0	0	0	0	0
7	Jakarta Barat	Cengkareng	3	0	0	0	0
8	Jakarta Barat	Kalideres	0	0	0	0	1
9	Jakarta Pusat	Gambir	4	0	1	0	1
10	Jakarta Pusat	Kemayoran	6	0	0	0	0
11	Jakarta Pusat	Senen	3	0	0	2	1
12	Jakarta Pusat	Cempaka Putih	0	0	0	0	0
13	Jakarta Pusat	Menteng	4	0	0	0	1
14	Jakarta Pusat	Tanah Abang	5	1	0	0	0
15	Jakarta Pusat	Johar Baru	2	0	0	2	0
16	Jakarta Pusat	Sawah Besar	4	0	0	1	0
17	Jakarta Timur	Matraman	2	0	0	0	1
18	Jakarta Timur	Pulo Gadung	3	0	0	3	0
19	Jakarta Timur	Cakung	3	0	0	0	0
20	Jakarta Timur	Jatinegara	5	1	0	0	2
21	Jakarta Timur	Kramat	0	0	0	1	0
22	Jakarta Timur	Pasar Rebo	0	0	0	0	0
23	Jakarta Timur	Duren Sawit	0	1	0	0	0
24	Jakarta Timur	Makasar	0	1	0	0	0
25	Jakarta Timur	Ciracas	0	0	0	0	0
26	Jakarta Timur	Cipayung	0	0	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	1	0	0	0	0
27	Jakarta Selatan	Tebet	7	0	0	0	0
28	Jakarta Selatan	Setia Budi	3	0	0	1	2
29	Jakarta Selatan	Mampang Prapatan	3	0	0	0	0
30	Jakarta Selatan	Pasar Minggu	3	0	0	0	0
31	Jakarta Selatan	Kebayoran Lama	2	0	0	0	3
32	Jakarta Selatan	Cilandak	3	0	0	0	0
33	Jakarta Selatan	Kebayoran Baru	5	1	0	0	1
34	Jakarta Selatan	Pancoran	2	0	0	0	0
35	Jakarta Selatan	Jagakarsa	0	0	0	0	0
36	Jakarta Selatan	Pesanggrahan	2	1	0	0	0
37	Jakarta Utara	Penjaringan	5	0	0	0	0
38	Jakarta Utara	Tanjung Priok	5	1	0	0	0
39	Jakarta Utara	Koja	2	0	0	1	1
40	Jakarta Utara	Cilincing	5	0	0	0	0
41	Jakarta Utara	Pademangan	3	0	0	0	0
42	Jakarta Utara	Kelapa Gading	0	0	0	1	0
Total			106	7	1	13	22

Only for Leaders  
Number of Answer

			2-7-9
			How much does your community pay for usual operation and maintenance (including repair) for the MCK or public toilets (for only respondents answering as Yes in 2-7-1)?
			Free
No.	Wilayah	Kecamatan	Rp.
1	Jakarta Barat	Grogol Petamburan	66,667
2	Jakarta Barat	Taman Sari	0
3	Jakarta Barat	Tambora	6,250
4	Jakarta Barat	Kebon Jeruk	0
5	Jakarta Barat	Palmerah	0
6	Jakarta Barat	Kembangan	0
7	Jakarta Barat	Cengkareng	210,000
8	Jakarta Barat	Kalideres	0
9	Jakarta Pusat	Gambir	562,500
10	Jakarta Pusat	Kemayoran	87,500
11	Jakarta Pusat	Senen	200,000
12	Jakarta Pusat	Cempaka Putih	0
13	Jakarta Pusat	Menteng	600,000
14	Jakarta Pusat	Tanah Abang	220,000
15	Jakarta Pusat	Johar Baru	975,000
16	Jakarta Pusat	Sawah Besar	21,000
17	Jakarta Timur	Matraman	1,667
18	Jakarta Timur	Pulo Gadung	9,833
19	Jakarta Timur	Cakung	0
20	Jakarta Timur	Jatinegara	186,000
21	Jakarta Timur	Kramat	0
22	Jakarta Timur	Pasar Rebo	0
23	Jakarta Timur	Duren Sawit	0
24	Jakarta Timur	Makasar	5,000
25	Jakarta Timur	Ciracas	0
26	Jakarta Timur	Cipayung	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0
27	Jakarta Selatan	Tebet	300,000
28	Jakarta Selatan	Setia Budi	135,000
29	Jakarta Selatan	Mampang Prapatan	0
30	Jakarta Selatan	Pasar Minggu	100,000
31	Jakarta Selatan	Kebayoran Lama	5,000,000
32	Jakarta Selatan	Cilandak	0
33	Jakarta Selatan	Kebayoran Baru	0
34	Jakarta Selatan	Pancoran	0
35	Jakarta Selatan	Jagakarsa	0
36	Jakarta Selatan	Pesangrahan	0
37	Jakarta Utara	Penjaringan	320,000
38	Jakarta Utara	Tanjung Priok	83,333
39	Jakarta Utara	Koja	101,000
40	Jakarta Utara	Cilincing	2,000
41	Jakarta Utara	Pademangan	0
42	Jakarta Utara	Kelapa Gading	1,000
Total			213,808

Only for Leaders  
Number of Answer

			2-7-10							
			Where is the final destination from your private toilet (for only respondents answering as Yes in 2-1)?							
			Summary of free comments							
No.	Wilayah	Kecamatan	1	2	3	4	5	6	7	8
			Should be clean	necessary	should be improved	Unknown	Should be popular	Not necessary	Good enough	Lack of space
1	Jakarta Barat	Grogol Petamburan	2	3	1	1	0	0	0	0
2	Jakarta Barat	Taman Sari	1	3	0	3	1	0	0	0
3	Jakarta Barat	Tambora	3	2	0	6	0	0	0	0
4	Jakarta Barat	Kebon Jeruk	2	2	0	3	0	0	0	0
5	Jakarta Barat	Palmerah	0	1	1	3	0	1	0	0
6	Jakarta Barat	Kembangan	0	3	0	2	1	0	0	0
7	Jakarta Barat	Cengkareng	0	4	1	1	0	0	0	0
8	Jakarta Barat	Kalideres	1	1	0	2	0	1	0	0
9	Jakarta Pusat	Gambir	0	2	2	2	0	0	0	0
10	Jakarta Pusat	Kemayoran	0	1	2	1	1	0	3	0
11	Jakarta Pusat	Senen	0	0	3	0	0	0	3	0
12	Jakarta Pusat	Cempaka Putih	0	1	0	2	0	0	0	0
13	Jakarta Pusat	Menteng	1	0	1	0	0	0	3	0
14	Jakarta Pusat	Tanah Abang	1	1	3	1	0	0	1	0
15	Jakarta Pusat	Johar Baru	0	3	0	1	0	0	0	0
16	Jakarta Pusat	Sawah Besar	0	5	0	0	0	0	0	0
17	Jakarta Timur	Matraman	1	3	0	1	0	0	0	1
18	Jakarta Timur	Pulo Gadung	0	3	1	1	0	1	1	0
19	Jakarta Timur	Cakung	3	1	1	2	0	0	0	0
20	Jakarta Timur	Jatinegara	1	4	1	0	0	0	2	0
21	Jakarta Timur	Kramat	2	1	0	3	0	1	0	0
22	Jakarta Timur	Pasar Rebo	0	2	1	1	0	1	0	0
23	Jakarta Timur	Duren Sawit	1	0	0	3	0	2	0	0
24	Jakarta Timur	Makasar	1	1	0	2	0	0	1	0
25	Jakarta Timur	Ciracas	1	0	1	1	0	0	2	0
26	Jakarta Timur	Cipayung	2	1	1	2	0	0	1	1
23*	Jakarta Timur	Duren Sawit (Makaka Sari)	0	0	0	1	0	0	0	0
27	Jakarta Selatan	Tebet	0	1	3	1	1	0	0	1
28	Jakarta Selatan	Setia Budi	1	0	2	3	0	1	1	0
29	Jakarta Selatan	Mampang Prapatan	0	2	0	2	0	0	1	0
30	Jakarta Selatan	Pasar Minggu	1	2	0	4	0	0	0	0
31	Jakarta Selatan	Kebayoran Lama	2	0	2	2	0	0	0	0
32	Jakarta Selatan	Cilandak	1	2	0	1	0	0	1	0
33	Jakarta Selatan	Kebayoran Baru	0	8	0	0	0	2	0	0
34	Jakarta Selatan	Pancoran	0	3	0	3	0	0	0	0
35	Jakarta Selatan	Jagakarsa	0	2	0	4	0	0	0	0
36	Jakarta Selatan	Pesanggrahan	0	3	0	1	0	0	0	1
37	Jakarta Utara	Penjaringan	0	3	1	0	1	0	0	0
38	Jakarta Utara	Tanjung Priok	2	4	1	0	0	0	0	0
39	Jakarta Utara	Koja	1	2	3	0	0	0	0	0
40	Jakarta Utara	Cilincing	0	4	1	1	0	0	0	1
41	Jakarta Utara	Pademangan	0	2	1	0	0	0	0	0
42	Jakarta Utara	Kelapa Gading	2	0	0	1	0	0	0	0
Total			33	86	34	68	5	10	20	5

Only for Leaders  
Number of Answer

			2-8-1	
			Do you know this fact the soak type septic tank can cause the groundwater pollution?	
			Single Choice	
			1	2
No.	Wilayah	Kecamatan	Yes	No
1	Jakarta Barat	Grogol Petamburan	5	2
2	Jakarta Barat	Taman Sari	6	2
3	Jakarta Barat	Tambora	6	5
4	Jakarta Barat	Kebon Jeruk	6	1
5	Jakarta Barat	Palmerah	1	5
6	Jakarta Barat	Kembangan	2	4
7	Jakarta Barat	Cengkareng	4	2
8	Jakarta Barat	Kalideres	2	3
9	Jakarta Pusat	Gambir	4	2
10	Jakarta Pusat	Kemayoran	7	1
11	Jakarta Pusat	Senen	5	1
12	Jakarta Pusat	Cempaka Putih	1	2
13	Jakarta Pusat	Menteng	2	3
14	Jakarta Pusat	Tanah Abang	6	1
15	Jakarta Pusat	Johar Baru	1	3
16	Jakarta Pusat	Sawah Besar	5	0
17	Jakarta Timur	Matraman	4	2
18	Jakarta Timur	Pulo Gadung	5	2
19	Jakarta Timur	Cakung	5	2
20	Jakarta Timur	Jatinegara	7	1
21	Jakarta Timur	Kramat	4	3
22	Jakarta Timur	Pasar Rebo	3	2
23	Jakarta Timur	Duren Sawit	4	2
24	Jakarta Timur	Makasar	4	1
25	Jakarta Timur	Ciracas	4	1
26	Jakarta Timur	Cipayung	5	3
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	1	0
27	Jakarta Selatan	Tebet	5	2
28	Jakarta Selatan	Setia Budi	6	2
29	Jakarta Selatan	Mampang Prapatan	4	1
30	Jakarta Selatan	Pasar Minggu	6	1
31	Jakarta Selatan	Kebayoran Lama	4	2
32	Jakarta Selatan	Cilandak	4	1
33	Jakarta Selatan	Kebayoran Baru	9	1
34	Jakarta Selatan	Pancoran	4	2
35	Jakarta Selatan	Jagakarsa	2	4
36	Jakarta Selatan	Pesanggrahan	5	0
37	Jakarta Utara	Penjaringan	5	0
38	Jakarta Utara	Tanjung Priok	5	2
39	Jakarta Utara	Koja	4	2
40	Jakarta Utara	Ciiling	5	2
41	Jakarta Utara	Pademangan	3	0
42	Jakarta Utara	Kelapa Gading	3	0
Total			183	78



Only for Leaders Number of Answer			2-8-2		
			How do you think of your community reaction to this improvement idea?		
			Single choice		
			1	2	3
No.	Wilayah	Kecamatan	I think our community will agree to this idea.	I do not think our community will agree to this idea.	I do not know.
1	Jakarta Barat	Grogol Petamburan	6	0	1
2	Jakarta Barat	Taman Sari	8	0	0
3	Jakarta Barat	Tambora	7	2	2
4	Jakarta Barat	Kebon Jeruk	5	1	1
5	Jakarta Barat	Palmerah	3	0	3
6	Jakarta Barat	Kembangan	5	0	1
7	Jakarta Barat	Cengkareng	3	1	2
8	Jakarta Barat	Kalideres	4	0	1
9	Jakarta Pusat	Gambir	5	0	1
10	Jakarta Pusat	Kemayoran	7	0	1
11	Jakarta Pusat	Senen	5	1	0
12	Jakarta Pusat	Cempaka Putih	1	0	2
13	Jakarta Pusat	Menteng	3	1	1
14	Jakarta Pusat	Tanah Abang	6	1	0
15	Jakarta Pusat	Johar Baru	3	0	1
16	Jakarta Pusat	Sawah Besar	5	0	0
17	Jakarta Timur	Matraman	3	2	1
18	Jakarta Timur	Pulo Gadung	3	2	2
19	Jakarta Timur	Cakung	6	0	1
20	Jakarta Timur	Jatinegara	7	0	1
21	Jakarta Timur	Kramat	4	0	3
22	Jakarta Timur	Pasar Rebo	4	0	1
23	Jakarta Timur	Duren Sawit	2	1	3
24	Jakarta Timur	Makasar	3	0	2
25	Jakarta Timur	Ciracas	3	1	1
26	Jakarta Timur	Cipayung	4	1	3
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	1	0	0
27	Jakarta Selatan	Tebet	7	0	0
28	Jakarta Selatan	Setia Budi	7	1	0
29	Jakarta Selatan	Mampang Prapatan	3	0	2
30	Jakarta Selatan	Pasar Minggu	6	0	1
31	Jakarta Selatan	Kebayoran Lama	4	1	1
32	Jakarta Selatan	Cilandak	4	0	1
33	Jakarta Selatan	Kebayoran Baru	8	0	2
34	Jakarta Selatan	Pancoran	3	2	1
35	Jakarta Selatan	Jagakarsa	4	0	2
36	Jakarta Selatan	Pesanggrahan	2	0	3
37	Jakarta Utara	Penjaringan	4	1	0
38	Jakarta Utara	Tanjung Priok	7	0	0
39	Jakarta Utara	Koja	6	0	0
40	Jakarta Utara	Cilincing	4	1	2
41	Jakarta Utara	Pademangan	2	1	0
42	Jakarta Utara	Kelapa Gading	3	0	0
Total			190	21	50

Only for Leaders  
Number of Answer

			2-8-3						
			How much can your community share the cost for this improvement?						
			Single choice						
No.	Wilayah	Kecamatan	1 Rp. 4,000,000 per one septic tank (the full amount)	2 Less than Rp. 3,000,000 per one septic tank (75% of the full amount)	3 Less than Rp. 2,000,000 per one septic tank (50% of the full amount)	4 Less than Rp. 1,000,000 per one septic tank (25% of the full amount)	5 Less than Rp. 400,000 per one septic tank (10% of the full amount)	6 Less than Rp. 200,000 per one septic tank (5% of the full amount)	7 Our community cannot share the cost at all.
1	Jakarta Barat	Grogol Petamburan	1	0	1	0	0	3	2
2	Jakarta Barat	Taman Sari	0	0	3	2	1	0	2
3	Jakarta Barat	Tambora	4	0	1	1	1	0	4
4	Jakarta Barat	Kebon Jeruk	0	0	0	1	0	4	2
5	Jakarta Barat	Palmerah	1	0	2	0	1	0	2
6	Jakarta Barat	Kembangan	1	1	0	1	1	0	2
7	Jakarta Barat	Cengkareng	0	0	0	2	2	2	0
8	Jakarta Barat	Kalideres	1	0	1	0	0	1	2
9	Jakarta Pusat	Gambir	0	0	1	1	0	0	4
10	Jakarta Pusat	Kemayoran	0	1	1	2	1	0	3
11	Jakarta Pusat	Senen	1	0	0	4	0	0	1
12	Jakarta Pusat	Cempaka Putih	0	0	1	0	0	1	1
13	Jakarta Pusat	Menteng	0	0	3	0	1	0	1
14	Jakarta Pusat	Tanah Abang	1	0	5	0	0	0	1
15	Jakarta Pusat	Johar Baru	0	0	1	1	0	1	1
16	Jakarta Pusat	Sawah Besar	0	0	1	1	0	0	3
17	Jakarta Timur	Matraman	2	0	0	1	0	2	1
18	Jakarta Timur	Pulo Gadung	0	1	1	2	1	1	1
19	Jakarta Timur	Cakung	1	0	1	0	1	4	0
20	Jakarta Timur	Jatinegara	0	0	0	1	2	4	1
21	Jakarta Timur	Kramat	1	1	2	1	2	0	0
22	Jakarta Timur	Pasar Rebo	1	0	0	1	2	1	0
23	Jakarta Timur	Duren Sawit	0	0	0	2	2	2	0
24	Jakarta Timur	Makasar	0	0	2	2	0	1	0
25	Jakarta Timur	Ciracas	0	0	2	2	1	0	0
26	Jakarta Timur	Cipayung	2	0	1	1	2	2	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	1	0	0	0
27	Jakarta Selatan	Tebet	0	0	0	1	3	1	2
28	Jakarta Selatan	Setia Budi	1	0	1	2	1	2	1
29	Jakarta Selatan	Mampang Prapatan	1	0	0	1	1	0	2
30	Jakarta Selatan	Pasar Minggu	0	0	1	1	3	2	0
31	Jakarta Selatan	Kebayoran Lama	0	0	1	2	2	0	1
32	Jakarta Selatan	Cilandak	0	1	1	1	1	0	1
33	Jakarta Selatan	Kebayoran Baru	1	0	2	0	4	0	3
34	Jakarta Selatan	Pancoran	0	0	0	1	1	2	2
35	Jakarta Selatan	Jagakarsa	1	1	0	2	0	1	1
36	Jakarta Selatan	Pesangrahan	0	0	1	1	0	0	3
37	Jakarta Utara	Penjaringan	1	0	0	1	0	2	1
38	Jakarta Utara	Tanjung Priok	0	0	1	1	0	3	2
39	Jakarta Utara	Koja	0	0	0	2	0	1	3
40	Jakarta Utara	Cilincing	0	0	0	1	0	4	2
41	Jakarta Utara	Pademangan	0	0	0	1	0	0	2
42	Jakarta Utara	Kelapa Gading	0	0	1	1	0	0	1
		Total	22	6	39	49	37	47	61

Only for Leaders  
Number of Answer

			2-9-1	
			Do you know SANIMAS?	
			Single Choice	
			1	2
No.	Wilayah	Kecamatan	Yes	No
1	Jakarta Barat	Grogol Petamburan	6	1
2	Jakarta Barat	Taman Sari	5	3
3	Jakarta Barat	Tambora	7	4
4	Jakarta Barat	Kebon Jeruk	4	3
5	Jakarta Barat	Palmerah	2	4
6	Jakarta Barat	Kembangan	2	4
7	Jakarta Barat	Cengkareng	5	1
8	Jakarta Barat	Kalideres	1	4
9	Jakarta Pusat	Gambir	5	1
10	Jakarta Pusat	Kemayoran	5	3
11	Jakarta Pusat	Senen	3	3
12	Jakarta Pusat	Cempaka Putih	1	2
13	Jakarta Pusat	Menteng	4	1
14	Jakarta Pusat	Tanah Abang	5	2
15	Jakarta Pusat	Johar Baru	1	3
16	Jakarta Pusat	Sawah Besar	4	1
17	Jakarta Timur	Matraman	5	1
18	Jakarta Timur	Pulo Gadung	6	1
19	Jakarta Timur	Cakung	4	3
20	Jakarta Timur	Jatinegara	5	3
21	Jakarta Timur	Kramat	1	6
22	Jakarta Timur	Pasar Rebo	0	5
23	Jakarta Timur	Duren Sawit	2	4
24	Jakarta Timur	Makasar	2	3
25	Jakarta Timur	Ciracas	2	3
26	Jakarta Timur	Cipayung	1	7
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	1	0
27	Jakarta Selatan	Tebet	4	3
28	Jakarta Selatan	Setia Budi	8	0
29	Jakarta Selatan	Mampang Prapatan	3	2
30	Jakarta Selatan	Pasar Minggu	4	3
31	Jakarta Selatan	Kebayoran Lama	3	3
32	Jakarta Selatan	Cilandak	3	2
33	Jakarta Selatan	Kebayoran Baru	9	1
34	Jakarta Selatan	Pancoran	2	4
35	Jakarta Selatan	Jagakarsa	3	3
36	Jakarta Selatan	Pesanggrahan	4	1
37	Jakarta Utara	Penjaringan	5	0
38	Jakarta Utara	Tanjung Priok	5	2
39	Jakarta Utara	Koja	4	2
40	Jakarta Utara	Cilincing	6	1
41	Jakarta Utara	Pademangan	3	0
42	Jakarta Utara	Kelapa Gading	2	1
Total			157	104

Only for Leaders

Answers (not the representative comment of Kecamatan)

			2-9-2
			opinion about SANIMAS
			Free
No.	Wilayah	Kecamatan	
1	Jakarta Barat	Grogol Petamburan	Socialization is necessary
2	Jakarta Barat	Taman Sari	Socialization is necessary, Unnecessary
3	Jakarta Barat	Tambora	Socialization is necessary
4	Jakarta Barat	Kebon Jeruk	Socialization is necessary
5	Jakarta Barat	Palmerah	
6	Jakarta Barat	Kembangan	Socialization is necessary
7	Jakarta Barat	Cengkareng	Necessary to implement, Socialization is necessary
8	Jakarta Barat	Kalideres	
9	Jakarta Pusat	Gambir	Necessary to implement
10	Jakarta Pusat	Kemayoran	
11	Jakarta Pusat	Senen	Socialization is necessary
12	Jakarta Pusat	Cempaka Putih	
13	Jakarta Pusat	Menteng	Necessary to implement
14	Jakarta Pusat	Tanah Abang	
15	Jakarta Pusat	Johar Baru	
16	Jakarta Pusat	Sawah Besar	Necessary to implement
17	Jakarta Timur	Matraman	
18	Jakarta Timur	Pulo Gadung	
19	Jakarta Timur	Cakung	Necessary to implement
20	Jakarta Timur	Jatinegara	
21	Jakarta Timur	Kramat	
22	Jakarta Timur	Pasar Rebo	
23	Jakarta Timur	Duren Sawit	Unnecessary
24	Jakarta Timur	Makasar	
25	Jakarta Timur	Ciracas	
26	Jakarta Timur	Cipayung	Socialization is necessary
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	
27	Jakarta Selatan	Tebet	
28	Jakarta Selatan	Setia Budi	Necessary to implement
29	Jakarta Selatan	Mampang Prapatan	
30	Jakarta Selatan	Pasar Minggu	
31	Jakarta Selatan	Kebayoran Lama	
32	Jakarta Selatan	Cilandak	Necessaryr to implement
33	Jakarta Selatan	Kebayoran Baru	
34	Jakarta Selatan	Pancoran	
35	Jakarta Selatan	Jagakarsa	
36	Jakarta Selatan	Pesanggrahan	We have another community service activity for environment
37	Jakarta Utara	Penjaringan	
38	Jakarta Utara	Tanjung Priok	
39	Jakarta Utara	Koja	
40	Jakarta Utara	Ciiling	Necessary to implement, Socialization is necessary
41	Jakarta Utara	Pademangan	
42	Jakarta Utara	Kelapa Gading	

Only for Leaders  
Number of Answer

Choices of Answer

- 1) Sewage system must be constructed all over Jakarta as soon as possible in order to make it clean, free from water-borne diseases and repelling odor, even if it strains national budget and demands as outlay from home economy.
- 2) Construction of sewage system should be started where water pollution is the most severe because full costs cannot be borne at a time. As the nation and the people get richer, it should be expanded to wider areas. Gradual approach is necessary for the resolution of the existing unsanitary conditions.
- 3) Sewage system should be constructed only where rich people reside. Average citizens, now already burdened with expensive water and electricity bills, cannot afford to it. Furthermore, they now do not feel an urgent need for it because the lack of it does not directly affect their daily lives.
- 4) The nation and the people cannot afford to such a luxury as sewage system. On-site sanitation facilities such as individual toilets with leaching pit, soak away and septic tank, and public toilet can suffice as an alternative for it. The government should promote their installation.

		2-10				
		How do you think of the sewage system?				
		Single choice				
No.	Wilyah	Kecamatan	1	2	3	4
1	Jakarta Barat	Grogol Petamburan	6	1	0	0
2	Jakarta Barat	Taman Sari	5	3	0	0
3	Jakarta Barat	Tambora	9	1	1	0
4	Jakarta Barat	Kebon Jeruk	5	2	0	0
5	Jakarta Barat	Palmerah	5	1	0	0
6	Jakarta Barat	Kembangan	5	0	0	1
7	Jakarta Barat	Cengkareng	2	2	0	2
8	Jakarta Barat	Kalideres	2	3	0	0
9	Jakarta Pusat	Gambir	5	1	0	0
10	Jakarta Pusat	Kemayoran	5	2	0	1
11	Jakarta Pusat	Senen	4	1	0	1
12	Jakarta Pusat	Cempaka Putih	0	2	0	1
13	Jakarta Pusat	Menteng	4	1	0	0
14	Jakarta Pusat	Tanah Abang	6	1	0	0
15	Jakarta Pusat	Johar Baru	3	1	0	0
16	Jakarta Pusat	Sawah Besar	2	1	0	2
17	Jakarta Timur	Matraman	5	0	0	1
18	Jakarta Timur	Pulo Gadung	6	1	0	0
19	Jakarta Timur	Cakung	7	0	0	0
20	Jakarta Timur	Jatinegara	6	1	0	1
21	Jakarta Timur	Kramat	3	2	1	1
22	Jakarta Timur	Pasar Rebo	4	1	0	0
23	Jakarta Timur	Duren Sawit	5	1	0	0
24	Jakarta Timur	Makasar	4	1	0	0
25	Jakarta Timur	Ciracas	4	1	0	0
26	Jakarta Timur	Cipayung	6	1	0	1
23 <sup>a</sup>	Jakarta Timur	Duren Sawit (Malaka Sari)	1	0	0	0
27	Jakarta Selatan	Tebet	6	1	0	0
28	Jakarta Selatan	Setia Budi	8	0	0	0
29	Jakarta Selatan	Mampang Prapatan	4	0	0	1
30	Jakarta Selatan	Pasar Minggu	4	2	1	0
31	Jakarta Selatan	Kebayoran Lama	4	1	0	1
32	Jakarta Selatan	Cilandak	3	0	0	2
33	Jakarta Selatan	Kebayoran Baru	9	1	0	0
34	Jakarta Selatan	Pancoran	5	1	0	0
35	Jakarta Selatan	Jagakarsa	4	0	0	2
36	Jakarta Selatan	Pesanggrahan	4	0	0	1
37	Jakarta Utara	Penjaringan	5	0	0	0
38	Jakarta Utara	Tanjung Priok	3	3	0	1
39	Jakarta Utara	Koja	3	1	0	2
40	Jakarta Utara	Cilincing	2	2	0	3
41	Jakarta Utara	Pademangan	0	2	0	1
42	Jakarta Utara	Kelapa Gading	1	1	0	1
		Total	184	47	3	27

Number of Answer			3-1							
			Could you accept to pay Rp. XXX per family per month for a sewerage tariff?							
			Single Choice							
			1				2			
			Yes				No			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K
			Rp. 20,000	Rp. 50,000	Rp. 120,000	Rp. 50,000	Rp. 20,000	Rp. 50,000	Rp. 120,000	Rp. 50,000
1	Jakarta Barat	Grogol Petamburan	3	2	2	4	4	5	5	3
2	Jakarta Barat	Taman Sari	4	4	2	7	4	4	6	1
3	Jakarta Barat	Tambora	5	3	1	3	6	8	10	8
4	Jakarta Barat	Kebon Jeruk	1	3	3	4	6	4	4	3
5	Jakarta Barat	Palmerah	2	3	2	3	4	3	4	3
6	Jakarta Barat	Kembangan	4	1	4	5	2	5	2	1
7	Jakarta Barat	Cengkareng	1	0	1	5	5	6	5	1
8	Jakarta Barat	Kalideres	2	4	1	2	3	1	4	3
9	Jakarta Pusat	Gambir	1	2	2	2	5	4	4	4
10	Jakarta Pusat	Kemayoran	3	6	4	5	5	2	4	3
11	Jakarta Pusat	Senen	3	2	2	2	3	4	4	4
12	Jakarta Pusat	Cempaka Putih	1	1	0	2	2	2	3	1
13	Jakarta Pusat	Menteng	3	2	2	1	2	3	3	4
14	Jakarta Pusat	Tanah Abang	2	1	2	3	5	6	5	4
15	Jakarta Pusat	Johar Baru	0	3	1	3	4	1	3	1
16	Jakarta Pusat	Sawah Besar	3	1	3	2	2	4	2	3
17	Jakarta Timur	Matraman	4	3	3	4	2	3	3	2
18	Jakarta Timur	Pulo Gadung	3	6	0	3	4	1	7	4
19	Jakarta Timur	Cakung	2	1	2	4	5	6	5	3
20	Jakarta Timur	Jatinegara	1	1	1	3	7	7	7	5
21	Jakarta Timur	Kramat	3	1	2	4	4	6	5	3
22	Jakarta Timur	Pasar Rebo	3	4	2	3	2	1	3	2
23	Jakarta Timur	Duren Sawit	3	2	2	3	3	4	4	3
24	Jakarta Timur	Makasar	4	2	2	3	1	3	3	2
25	Jakarta Timur	Ciracas	2	1	3	2	3	4	2	3
26	Jakarta Timur	Cipayung	5	3	2	4	3	5	6	4
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	5	4	1	1	1	2	5	0
27	Jakarta Selatan	Tebet	3	4	3	3	4	3	4	4
28	Jakarta Selatan	Setia Budi	6	3	4	4	2	5	4	4
29	Jakarta Selatan	Mampang Prapatan	0	2	4	2	5	3	1	3
30	Jakarta Selatan	Pasar Minggu	3	2	1	6	4	5	6	1
31	Jakarta Selatan	Kebayoran Lama	5	4	3	3	1	2	3	3
32	Jakarta Selatan	Cilandak	2	1	2	4	3	4	3	1
33	Jakarta Selatan	Kebayoran Baru	4	6	5	8	6	4	5	2
34	Jakarta Selatan	Pancoran	3	3	2	2	3	3	4	4
35	Jakarta Selatan	Jagakarsa	2	2	2	2	4	4	4	4
36	Jakarta Selatan	Pesanggrahan	2	3	2	2	3	2	3	3
37	Jakarta Utara	Penjaringan	2	0	1	4	3	5	4	1
38	Jakarta Utara	Tanjung Priok	3	2	2	3	4	5	5	4
39	Jakarta Utara	Koja	2	1	1	2	4	5	5	4
40	Jakarta Utara	Cilincing	2	1	2	6	5	6	5	1
41	Jakarta Utara	Pademangan	2	0	2	3	1	3	1	0
42	Jakarta Utara	Kelapa Gading	1	3	1	2	2	0	2	1
Total			115	103	89	143	151	163	177	118

Number of Answer

		3-2												
		Please write down the reason briefly why you answer No in Question 3-1 (for only respondents answering as 2) in 3-1)?												
		Summary of Free comment												
		1				2				3				
		Unnecessary				Expensive				Need more information				
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	2	1	0	0	1	2	3	2	1	2	2	1
2	Jakarta Barat	Taman Sari	0	0	0	0	3	3	3	0	1	1	3	1
3	Jakarta Barat	Tambora	1	0	1	0	3	4	6	6	1	2	3	2
4	Jakarta Barat	Kebon Jeruk	2	0	0	0	2	2	3	2	2	1	1	1
5	Jakarta Barat	Palmerah	0	0	0	1	4	3	4	1	0	0	0	1
6	Jakarta Barat	Kembangan	1	2	0	0	1	2	0	1	0	1	2	0
7	Jakarta Barat	Cengkareng	0	0	1	0	4	4	2	1	1	0	1	0
8	Jakarta Barat	Kalideres	0	0	1	0	2	1	2	3	0	0	0	0
9	Jakarta Pusat	Gambir	0	0	0	0	5	4	4	3	0	0	0	1
10	Jakarta Pusat	Kemayoran	0	0	0	0	5	2	4	3	0	0	0	0
11	Jakarta Pusat	Senen	0	0	0	0	2	3	4	3	1	1	0	1
12	Jakarta Pusat	Cempaka Putih	0	1	0	0	2	1	3	0	0	0	0	1
13	Jakarta Pusat	Menteng	0	0	0	0	2	3	3	4	0	0	0	0
14	Jakarta Pusat	Tanah Abang	0	0	0	0	5	6	5	4	0	0	0	0
15	Jakarta Pusat	Johar Baru	0	0	0	0	3	1	2	1	1	0	1	0
16	Jakarta Pusat	Sawah Besar	0	0	0	0	2	4	2	0	0	0	0	3
17	Jakarta Timur	Matraman	0	0	2	0	1	2	0	1	0	1	1	1
18	Jakarta Timur	Pulo Gadung	1	0	1	1	3	1	4	2	0	0	2	1
19	Jakarta Timur	Cakung	0	0	0	0	2	4	2	2	3	2	3	0
20	Jakarta Timur	Jatinegara	0	0	0	0	6	2	6	5	1	5	1	0
21	Jakarta Timur	Kramat	0	2	0	0	1	4	3	2	0	0	1	0
22	Jakarta Timur	Pasar Rebo	0	0	1	0	1	1	2	2	0	0	0	0
23	Jakarta Timur	Duren Sawit	1	0	2	0	2	4	1	2	0	0	1	1
24	Jakarta Timur	Makasar	0	1	0	0	1	1	2	1	0	1	1	1
25	Jakarta Timur	Ciracas	2	2	0	0	1	1	0	2	0	1	0	1
26	Jakarta Timur	Cipayung	0	1	0	0	3	4	4	3	0	0	2	1
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	1	0	0	2	4	0	0	0	0	0
27	Jakarta Selatan	Tebet	1	0	0	1	3	3	4	3	0	0	0	0
28	Jakarta Selatan	Setia Budi	1	2	0	0	1	3	4	3	0	0	0	1
29	Jakarta Selatan	Mampang Prapatan	0	0	0	0	4	3	0	2	0	0	0	1
30	Jakarta Selatan	Pasar Minggu	0	0	2	0	3	5	3	0	1	0	0	0
31	Jakarta Selatan	Kebayoran Lama	0	0	0	1	1	2	3	2	0	0	0	0
32	Jakarta Selatan	Cilandak	0	0	1	0	2	3	1	1	0	1	1	0
33	Jakarta Selatan	Kebayoran Baru	0	1	0	0	6	3	4	0	0	0	1	2
34	Jakarta Selatan	Pancoran	0	0	1	0	2	3	3	2	1	0	0	1
35	Jakarta Selatan	Jagakarsa	3	0	0	0	1	1	2	2	0	2	2	2
36	Jakarta Selatan	Pesanggrahan	0	0	0	0	3	2	2	3	0	0	1	0
37	Jakarta Utara	Penjaringan	0	0	0	0	3	5	4	0	0	0	0	1
38	Jakarta Utara	Tanjung Priok	1	0	0	0	3	4	5	2	0	1	0	2
39	Jakarta Utara	Koja	1	0	0	0	3	4	4	3	0	1	1	1
40	Jakarta Utara	Cilincing	1	0	0	0	3	2	5	1	1	4	0	0
41	Jakarta Utara	Pademangan	0	0	0	0	1	3	1	0	0	0	0	0
42	Jakarta Utara	Kelapa Gading	0	0	0	0	2	0	1	1	0	0	1	0
		Total	18	13	14	4	108	117	124	81	15	27	32	29

Number of Answer			3-3							
			Could you accept to pay Rp. XXX per family per month for a sewerage tariff (for only respondents answering as 2) in 3-1)?							
			Single Choice							
			1				2			
			Yes				No			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K
			Rp. 15,000	Rp. 40,000	Rp. 96,000	Rp. 40,000	Rp. 15,000	Rp. 40,000	Rp. 96,000	Rp. 40,000
1	Jakarta Barat	Grogol Petamburan	1	1	2	0	3	4	3	3
2	Jakarta Barat	Taman Sari	0	0	1	0	4	4	5	1
3	Jakarta Barat	Tambora	1	1	0	0	5	7	10	8
4	Jakarta Barat	Kebon Jeruk	0	0	1	0	6	4	3	3
5	Jakarta Barat	Palmerah	1	0	2	1	3	3	2	2
6	Jakarta Barat	Kembangan	0	2	0	0	2	3	2	1
7	Jakarta Barat	Cengkareng	1	0	1	1	4	6	4	0
8	Jakarta Barat	Kalderes	1	0	1	0	2	1	3	3
9	Jakarta Pusat	Gambir	0	1	0	1	5	3	4	3
10	Jakarta Pusat	Kemayoran	2	1	3	0	3	1	1	3
11	Jakarta Pusat	Senen	1	0	0	2	2	4	4	2
12	Jakarta Pusat	Cempaka Putih	0	1	1	0	2	1	2	1
13	Jakarta Pusat	Menteng	0	0	1	0	2	3	2	4
14	Jakarta Pusat	Tanah Abang	0	1	1	0	5	5	4	4
15	Jakarta Pusat	Johar Baru	3	0	1	0	1	1	2	1
16	Jakarta Pusat	Sawah Besar	0	0	0	1	2	4	2	2
17	Jakarta Timur	Matraman	1	1	0	2	1	2	3	0
18	Jakarta Timur	Pulo Gadung	0	0	0	0	4	1	7	4
19	Jakarta Timur	Cakung	0	0	0	0	5	6	5	3
20	Jakarta Timur	Jatinegara	0	2	0	0	7	5	7	5
21	Jakarta Timur	Kramat	1	0	0	0	3	6	5	3
22	Jakarta Timur	Pasar Rebo	0	0	2	1	2	1	1	1
23	Jakarta Timur	Duren Sawit	0	0	0	0	3	4	4	3
24	Jakarta Timur	Makasar	0	0	0	0	1	3	3	2
25	Jakarta Timur	Ciracas	0	0	1	1	3	4	1	2
26	Jakarta Timur	Cipayung	0	0	1	0	3	5	5	4
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	1	2	5	0
27	Jakarta Selatan	Tebet	0	2	1	1	4	1	3	3
28	Jakarta Selatan	Setia Budi	0	2	0	0	2	3	4	4
29	Jakarta Selatan	Mampang Prapatan	1	0	0	0	4	3	1	3
30	Jakarta Selatan	Pasar Minggu	1	0	2	0	3	5	4	1
31	Jakarta Selatan	Kebayoran Lama	0	0	0	0	1	2	3	3
32	Jakarta Selatan	Cilandak	0	0	0	0	3	4	3	1
33	Jakarta Selatan	Kebayoran Baru	1	0	0	0	5	4	5	2
34	Jakarta Selatan	Pancoran	0	1	1	0	3	2	3	4
35	Jakarta Selatan	Jagakarsa	0	0	0	0	4	4	4	4
36	Jakarta Selatan	Pesanggrahan	0	0	0	0	3	2	3	3
37	Jakarta Utara	Penjaringan	0	0	0	0	3	5	4	1
38	Jakarta Utara	Tanjung Priok	0	0	0	0	4	5	5	4
39	Jakarta Utara	Koja	2	1	0	0	2	4	5	4
40	Jakarta Utara	Cilincing	0	1	1	0	5	5	4	1
41	Jakarta Utara	Pademangan	0	0	0	0	1	3	1	0
42	Jakarta Utara	Kelapa Gading	0	0	1	0	2	0	1	1
		Total	18	18	25	11	133	145	152	107



Number of Answer			3-4							
			Could you accept to pay Rp. XXX per family per month for a sewerage tariff (for only respondents answering as 1) in 3-1)?							
			Single Choice							
			1				2			
			Yes				No			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K
			Rp. 25,000	Rp. 60,000	Rp. 144,000	Rp. 60,000	Rp. 25,000	Rp. 60,000	Rp. 144,000	Rp. 60,000
1	Jakarta Barat	Grogol Petamburan	2	2	2	3	1	0	0	1
2	Jakarta Barat	Taman Sari	2	2	1	5	2	2	1	2
3	Jakarta Barat	Tambora	2	1	0	3	3	2	1	0
4	Jakarta Barat	Kebon Jeruk	0	2	2	3	1	1	1	1
5	Jakarta Barat	Palmerah	0	1	2	2	2	2	0	1
6	Jakarta Barat	Kembangan	1	0	2	0	3	1	2	5
7	Jakarta Barat	Cengkareng	0	0	0	4	1	0	1	1
8	Jakarta Barat	Kalderes	0	3	1	0	2	1	0	2
9	Jakarta Pusat	Gambir	1	0	2	1	0	2	0	1
10	Jakarta Pusat	Kemayoran	1	3	4	4	2	3	0	1
11	Jakarta Pusat	Senen	2	1	2	2	1	1	0	0
12	Jakarta Pusat	Cempaka Putih	0	1	0	1	1	0	0	1
13	Jakarta Pusat	Menteng	1	1	2	1	2	1	0	0
14	Jakarta Pusat	Tanah Abang	2	0	2	3	0	1	0	0
15	Jakarta Pusat	Johar Baru	0	0	1	1	0	3	0	2
16	Jakarta Pusat	Sawah Besar	1	1	1	2	2	0	2	0
17	Jakarta Timur	Matraman	1	3	2	4	3	0	1	0
18	Jakarta Timur	Pulo Gadung	2	4	0	1	1	2	0	2
19	Jakarta Timur	Cakung	0	0	1	1	2	1	1	3
20	Jakarta Timur	Jatinegara	1	1	0	2	0	0	1	1
21	Jakarta Timur	Kramat	3	1	0	2	0	0	2	2
22	Jakarta Timur	Pasar Rebo	3	3	2	3	0	1	0	0
23	Jakarta Timur	Duren Sawit	2	2	2	3	1	0	0	0
24	Jakarta Timur	Makasar	3	2	1	1	1	0	1	2
25	Jakarta Timur	Ciracas	2	1	1	2	0	0	2	0
26	Jakarta Timur	Cipayung	4	2	2	3	1	1	0	1
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	5	4	1	1	0	0	0	0
27	Jakarta Selatan	Tebet	3	3	3	3	0	1	0	0
28	Jakarta Selatan	Setia Budi	5	1	4	1	1	2	0	3
29	Jakarta Selatan	Mampang Prapatan	0	1	4	2	0	1	0	0
30	Jakarta Selatan	Pasar Minggu	2	2	1	6	1	0	0	0
31	Jakarta Selatan	Kebayoran Lama	5	4	3	3	0	0	0	0
32	Jakarta Selatan	Cilandak	0	0	2	1	2	1	0	3
33	Jakarta Selatan	Kebayoran Baru	4	6	4	8	0	0	1	0
34	Jakarta Selatan	Pancoran	3	2	2	2	0	1	0	0
35	Jakarta Selatan	Jagakarsa	2	1	1	2	0	1	1	0
36	Jakarta Selatan	Pesanggrahan	2	3	2	2	0	0	0	0
37	Jakarta Utara	Penjaringan	1	0	1	2	1	0	0	2
38	Jakarta Utara	Tanjung Priok	1	2	2	2	2	0	0	1
39	Jakarta Utara	Koja	2	0	1	2	0	1	0	0
40	Jakarta Utara	Cilincing	1	0	2	5	1	1	0	1
41	Jakarta Utara	Pademangan	0	0	1	2	2	0	1	1
42	Jakarta Utara	Kelapa Gading	0	3	1	2	1	0	0	0
		Total	72	69	70	103	43	34	19	40

Number of Answer

			3-5							
			Please write down the reason briefly why you answer No in Question 3-4 (for only respondents answering as 2) in 3-4)?							
			Summary of Free comment							
			1				2			
			Expensive				Need more information			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	2	0	0	1	0	0	0	0
2	Jakarta Barat	Taman Sari	0	1	0	2	1	1	1	0
3	Jakarta Barat	Tambora	2	2	1	0	1	0	0	0
4	Jakarta Barat	Kebon Jeruk	1	0	1	0	0	0	0	1
5	Jakarta Barat	Palmerah	2	2	0	1	0	0	0	0
6	Jakarta Barat	Kembangan	1	1	2	1	0	0	0	1
7	Jakarta Barat	Cengkareng	1	0	1	1	0	0	0	0
8	Jakarta Barat	Kahderes	2	1	0	2	0	0	0	0
9	Jakarta Pusat	Gambir	0	1	0	1	0	1	0	0
10	Jakarta Pusat	Kemayoran	2	3	0	1	0	1	0	0
11	Jakarta Pusat	Senen	1	1	0	0	0	0	0	0
12	Jakarta Pusat	Cempaka Putih	1	0	0	1	0	0	0	0
13	Jakarta Pusat	Menteng	2	0	0	0	0	0	0	0
14	Jakarta Pusat	Tanah Abang	0	1	0	0	0	0	0	0
15	Jakarta Pusat	Johar Baru	0	3	0	0	0	0	0	2
16	Jakarta Pusat	Sawah Besar	2	0	2	0	0	0	0	0
17	Jakarta Timur	Matraman	1	0	0	0	2	0	1	0
18	Jakarta Timur	Pulo Gadung	1	2	0	2	0	0	0	0
19	Jakarta Timur	Cakung	1	1	1	3	1	0	0	0
20	Jakarta Timur	Jatinegara	0	0	1	1	0	0	0	0
21	Jakarta Timur	Kramat	0	0	2	2	0	0	0	0
22	Jakarta Timur	Pasar Rebo	1	1	0	1	0	0	0	0
23	Jakarta Timur	Duren Sawit	1	0	0	0	0	0	0	0
24	Jakarta Timur	Makasar	1	0	1	1	0	0	0	0
25	Jakarta Timur	Ciracas	0	0	1	0	0	0	0	0
26	Jakarta Timur	Cipayung	1	0	0	0	0	1	0	1
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	0	0
27	Jakarta Selatan	Tebet	0	0	0	0	0	0	0	0
28	Jakarta Selatan	Setia Budi	1	2	0	1	0	0	0	1
29	Jakarta Selatan	Mampang Prapatan	0	1	0	0	0	0	0	0
30	Jakarta Selatan	Pasar Minggu	1	0	0	0	0	0	0	0
31	Jakarta Selatan	Kebayoran Lama	0	0	0	0	0	0	0	0
32	Jakarta Selatan	Cilandak	1	1	0	2	0	0	0	1
33	Jakarta Selatan	Kebayoran Baru	0	0	1	0	0	0	0	0
34	Jakarta Selatan	Pancoran	0	1	0	0	0	0	0	0
35	Jakarta Selatan	Jagakarsa	0	0	0	0	0	0	1	0
36	Jakarta Selatan	Pesangrahan	0	0	0	0	0	0	0	0
37	Jakarta Utara	Penjaringan	1	0	0	2	0	0	0	0
38	Jakarta Utara	Tanjung Priok	2	0	0	1	0	0	0	0
39	Jakarta Utara	Koja	0	1	0	0	0	0	0	0
40	Jakarta Utara	Cilincing	1	1	0	0	0	0	0	0
41	Jakarta Utara	Pademangan	2	0	1	0	0	0	0	1
42	Jakarta Utara	Kelapa Gading	1	0	0	0	0	0	0	0
Total			36	27	15	27	5	4	3	8

Number of Answer			3-6																				
			Please write down your opinion briefly about satisfaction level, complain or requirement for sewerage service if you have.																				
			Summary of Free comment																				
			1				2				3				4				5				
			No problem				Need more efforts by Government				Need socialization				Need improvement of sanitation				Others				
No.	Wiyah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	
1	Jakarta Barat	Grogol Petamburan	2	3	2	2	2	0	0	0	0	0	0	0	0	2	2	2	2	0	2	2	1
2	Jakarta Barat	Taman Sari	6	3	3	2	1	0	2	0	1	0	0	3	0	0	0	1	0	3	2	0	0
3	Jakarta Barat	Tambora	5	3	6	3	0	0	1	0	0	1	1	1	1	4	1	2	3	0	1	2	2
4	Jakarta Barat	Kebon Jeruk	2	3	1	2	0	0	0	1	0	0	0	0	1	2	2	0	1	0	2	2	2
5	Jakarta Barat	Palmerah	0	1	2	1	0	1	2	0	0	0	1	0	2	2	0	2	0	2	1	0	0
6	Jakarta Barat	Kembangan	6	4	2	4	0	1	0	0	0	0	0	0	0	0	4	1	0	1	0	1	0
7	Jakarta Barat	Cengkareng	2	2	0	0	0	0	0	0	0	0	0	0	2	0	1	3	2	3	3	3	3
8	Jakarta Barat	Kalideres	1	3	3	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
9	Jakarta Pusat	Gambir	3	2	3	4	1	0	0	0	0	0	0	0	1	2	1	0	1	0	1	0	2
10	Jakarta Pusat	Kemayoran	1	2	1	3	0	0	0	0	0	0	0	0	4	1	5	1	3	2	1	2	2
11	Jakarta Pusat	Senen	2	2	1	0	0	0	0	0	0	0	1	1	2	3	3	2	2	1	0	2	2
12	Jakarta Pusat	Cempaka Putih	3	1	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	1	1
13	Jakarta Pusat	Menteng	2	4	4	0	0	0	0	0	0	0	1	0	0	1	0	2	2	0	0	1	1
14	Jakarta Pusat	Tanah Abang	2	2	3	1	0	1	1	0	0	1	0	1	1	1	1	1	3	2	0	4	4
15	Jakarta Pusat	Johar Baru	2	2	2	0	0	1	0	0	0	0	1	0	1	0	0	4	1	1	1	1	0
16	Jakarta Pusat	Sawah Besar	0	1	1	0	0	0	1	0	0	2	1	1	2	1	0	1	3	1	2	3	3
17	Jakarta Timur	Matraman	0	0	1	1	0	0	0	0	2	0	0	0	0	2	0	1	3	2	3	3	3
18	Jakarta Timur	Pulo Gadung	1	0	3	0	0	0	2	0	2	1	1	1	1	2	0	3	2	4	1	3	3
19	Jakarta Timur	Cakung	1	1	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	2	4	3	3
20	Jakarta Timur	Jatinegara	2	1	0	0	1	0	0	0	1	0	0	0	0	2	1	1	1	5	1	6	6
21	Jakarta Timur	Kramat	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	2	1	3	0	1	
22	Jakarta Timur	Pasar Rebo	0	1	1	0	0	0	0	1	0	0	0	1	0	0	0	1	2	1	0	1	1
23	Jakarta Timur	Duren Sawit	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0
24	Jakarta Timur	Makasar	0	0	1	1	0	2	2	0	0	0	0	0	1	0	0	1	1	1	0	1	1
25	Jakarta Timur	Ciracas	1	1	1	2	0	1	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0
26	Jakarta Timur	Cipayung	0	3	5	2	0	0	0	0	0	0	0	1	0	0	0	3	6	2	2	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	1	1	1	1	0	2	0	0	0	0	0	0	0	2	2	0	0	1	2	0	0
27	Jakarta Selatan	Tebet	3	2	2	0	0	0	1	0	0	0	0	1	1	2	2	3	2	1	1	1	0
28	Jakarta Selatan	Setia Budi	1	1	1	2	1	1	0	0	1	2	2	1	2	0	3	3	3	1	1	1	1
29	Jakarta Selatan	Mampang Prapatan	2	3	3	0	1	0	0	1	0	0	0	0	1	1	0	2	0	0	0	0	0
30	Jakarta Selatan	Pasar Minggu	1	2	0	1	0	0	0	0	0	0	1	0	3	3	1	0	1	1	2	1	1
31	Jakarta Selatan	Kebayoran Lama	2	2	2	1	0	0	0	0	0	0	3	0	0	2	0	0	2	1	1	3	3
32	Jakarta Selatan	Cilandak	0	0	1	1	0	0	1	0	0	1	0	0	1	0	2	2	2	0	0	2	2
33	Jakarta Selatan	Kebayoran Baru	4	5	2	1	2	0	0	1	0	0	2	0	2	3	3	3	2	2	2	2	5
34	Jakarta Selatan	Pancoran	0	1	0	0	0	0	0	0	0	0	1	0	2	1	1	2	0	0	0	0	0
35	Jakarta Selatan	Jagakarsa	0	1	1	1	0	0	1	0	0	1	2	0	1	3	0	1	1	0	1	0	0
36	Jakarta Selatan	Pesanggrahan	2	1	1	1	0	2	0	1	0	1	1	0	0	1	2	0	0	0	0	1	1
37	Jakarta Utara	Penjaringan	3	1	0	0	0	0	0	0	0	0	0	0	0	2	0	1	2	2	4	4	4
38	Jakarta Utara	Tanjung Priok	3	1	0	0	0	0	0	0	0	0	0	0	2	1	2	0	2	1	4	6	3
39	Jakarta Utara	Koja	1	0	0	0	0	0	2	0	2	0	1	0	1	1	0	0	1	2	2	5	5
40	Jakarta Utara	Cilincing	1	0	1	0	0	0	0	0	1	0	0	1	0	1	1	2	3	4	4	3	3
41	Jakarta Utara	Pademangan	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	1	2	2	1	1
42	Jakarta Utara	Kelapa Gading	0	1	0	0	0	0	0	1	1	0	1	2	1	1	0	0	1	1	2	0	0
		Total	72	68	63	40	10	12	18	6	11	10	22	19	39	51	40	58	60	66	60	72	72

Number of Answer

			4-1																			
			How long have you lived in your present house?																			
			Single Choice																			
			1				2				3				4				5			
			Less than 10 years				10-20 years				21- 30 years				31-60 years				More than 61 years			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	0	0	1	2	2	1	1	2	3	3	2	1	2	3	3	2	0	0	0	0
2	Jakarta Barat	Taman Sari	1	2	1	3	1	2	0	4	0	1	1	1	6	3	5	0	0	0	1	0
3	Jakarta Barat	Tambora	1	0	1	1	2	0	0	4	0	3	1	4	7	6	9	2	1	2	0	0
4	Jakarta Barat	Kebon Jeruk	1	1	0	1	1	2	1	5	2	3	2	0	2	0	2	1	1	1	2	0
5	Jakarta Barat	Palmerah	3	2	3	2	2	0	1	1	1	2	0	1	0	2	0	2	0	0	2	0
6	Jakarta Barat	Kembangan	2	1	2	3	1	0	0	1	2	3	2	0	1	2	1	2	0	0	1	0
7	Jakarta Barat	Cengkareng	1	2	2	0	0	1	0	3	2	0	2	2	3	3	2	1	0	0	0	0
8	Jakarta Barat	Kalideres	1	0	1	1	0	3	2	0	4	0	1	2	0	2	1	2	0	0	0	0
9	Jakarta Pusat	Gambir	0	1	1	1	3	1	0	3	0	1	1	2	3	2	4	0	0	1	0	0
10	Jakarta Pusat	Kemayoran	1	5	0	1	2	1	2	3	1	1	4	2	4	1	2	2	0	0	0	0
11	Jakarta Pusat	Senen	1	0	1	5	1	1	1	1	1	1	0	0	3	3	3	0	0	1	1	0
12	Jakarta Pusat	Cempaka Putih	0	0	1	1	1	1	0	1	0	0	0	1	2	2	2	0	0	0	0	0
13	Jakarta Pusat	Menteng	1	0	0	0	0	1	0	1	0	0	0	2	4	3	5	2	0	1	0	0
14	Jakarta Pusat	Tanah Abang	5	0	1	3	0	1	2	3	1	1	0	1	1	5	3	0	0	0	1	0
15	Jakarta Pusat	Johar Baru	0	0	0	0	0	0	2	2	0	2	0	2	3	2	2	0	1	0	0	0
16	Jakarta Pusat	Sawah Besar	0	1	0	0	0	0	2	2	1	2	2	1	4	2	1	2	0	0	0	0
17	Jakarta Timur	Matraman	1	2	1	2	0	2	1	1	3	0	2	2	2	2	2	1	0	0	0	0
18	Jakarta Timur	Pulo Gadung	1	3	2	1	2	2	1	3	2	1	1	1	2	1	3	2	0	0	0	0
19	Jakarta Timur	Cakung	4	3	2	1	1	2	3	4	2	1	1	2	0	1	1	0	0	0	0	0
20	Jakarta Timur	Jatinegara	0	1	0	2	1	0	3	4	1	1	2	1	6	5	2	0	0	1	1	1
21	Jakarta Timur	Kramat	0	4	2	0	0	0	1	5	2	1	1	2	5	2	3	0	0	0	0	0
22	Jakarta Timur	Pasar Rebo	3	3	1	1	0	0	2	4	2	0	0	0	2	2	0	0	0	0	0	0
23	Jakarta Timur	Duren Sawit	1	2	1	0	1	2	3	3	2	1	2	2	1	0	1	0	0	0	0	0
24	Jakarta Timur	Makasar	1	1	0	1	2	0	1	3	1	1	3	0	1	3	1	1	0	0	0	0
25	Jakarta Timur	Ciracas	2	0	1	1	1	1	1	2	1	3	1	1	1	1	2	1	0	0	0	0
26	Jakarta Timur	Cipayung	1	1	1	2	4	1	2	3	0	2	3	1	3	4	2	2	0	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	0	0	2	1	0	1	0	0	6	5	3	0	0	0	0	0
27	Jakarta Selatan	Tebet	2	1	2	3	0	0	1	2	2	4	2	1	3	2	2	1	0	0	0	0
28	Jakarta Selatan	Setia Budi	1	2	1	2	1	0	3	3	2	2	0	3	4	4	3	0	0	0	1	0
29	Jakarta Selatan	Mampang Prapatan	1	0	0	1	2	2	1	3	1	2	3	1	0	1	1	0	1	0	0	0
30	Jakarta Selatan	Pasar Minggu	2	0	0	3	0	0	2	1	1	1	2	2	4	4	1	1	0	0	3	0
31	Jakarta Selatan	Kebayoran Lama	1	1	2	1	2	1	1	2	1	1	2	3	2	3	1	0	0	0	0	0
32	Jakarta Selatan	Cilandak	2	2	0	0	0	2	0	0	2	0	1	1	1	0	4	4	0	1	0	0
33	Jakarta Selatan	Kebayoran Baru	1	3	1	6	0	3	1	1	4	1	3	1	5	3	5	2	0	0	0	0
34	Jakarta Selatan	Pancoran	0	0	2	2	3	2	1	2	2	3	2	1	1	1	1	1	0	0	0	0
35	Jakarta Selatan	Jagakarsa	2	1	1	2	2	1	2	2	1	2	2	0	1	1	1	2	0	1	0	0
36	Jakarta Selatan	Pesanggrahan	0	1	1	0	2	1	1	2	2	2	2	2	1	1	1	1	0	0	0	0
37	Jakarta Utara	Penjaringan	2	2	1	2	1	0	3	1	0	2	0	1	2	1	1	1	0	0	0	0
38	Jakarta Utara	Tanjung Priok	3	2	4	3	2	2	0	2	0	3	2	0	2	0	1	2	0	0	0	0
39	Jakarta Utara	Koja	1	1	0	2	1	0	2	1	2	3	4	1	2	2	0	2	0	0	0	0
40	Jakarta Utara	Cilincing	1	2	2	0	3	1	1	5	2	2	1	2	1	2	3	0	0	0	0	0
41	Jakarta Utara	Pademangan	2	0	1	1	1	1	2	1	0	2	0	0	0	0	1	0	0	0	0	0
42	Jakarta Utara	Kelapa Gading	0	1	0	0	1	0	0	2	1	0	2	1	1	2	1	0	0	0	0	0
		Total	53	54	44	63	49	43	54	99	57	65	63	54	103	95	92	44	4	9	13	1

Number of Answer

4-2																											
Which housing type is applied to your house?																											
Single Choice																											
1 2 3 4 5 6 7																											
Private house (settled) Private house (credit) Apartment house Rental house Building attached with the commercial building Row house Others																											
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	
1	Jakarta Barat	Grogol Petamburan	5	6	7	6	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
2	Jakarta Barat	Taman Sari	7	6	8	8	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0
3	Jakarta Barat	Tambora	9	11	10	10	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0
4	Jakarta Barat	Kebon Jeruk	6	7	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
5	Jakarta Barat	Palmerah	1	5	6	5	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	1	0	0	0
6	Jakarta Barat	Kembangan	6	5	6	6	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
7	Jakarta Barat	Cengkareng	4	4	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
8	Jakarta Barat	Kalderes	4	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
9	Jakarta Pusat	Gambir	1	4	5	4	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	2	0	0	0	0
10	Jakarta Pusat	Kemayoran	6	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
11	Jakarta Pusat	Senen	5	4	6	4	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0
12	Jakarta Pusat	Cempaka Putih	1	3	1	3	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
13	Jakarta Pusat	Menteng	4	3	5	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	
14	Jakarta Pusat	Tanah Abang	5	6	6	6	0	1	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	1
15	Jakarta Pusat	Johar Baru	4	4	4	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Jakarta Pusat	Sawah Besar	3	4	4	5	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0
17	Jakarta Timur	Matraman	5	4	5	3	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0
18	Jakarta Timur	Pulo Gadung	5	5	5	6	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	2	1
19	Jakarta Timur	Cakung	4	5	6	6	0	0	0	1	0	0	0	0	2	1	0	0	0	0	0	0	1	1	0	0	0
20	Jakarta Timur	Jatinegara	8	7	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
21	Jakarta Timur	Kramat	7	4	7	7	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0
22	Jakarta Timur	Pasar Rebo	4	4	4	5	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
23	Jakarta Timur	Duren Sawit	4	6	5	5	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	1
24	Jakarta Timur	Makasar	5	4	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
25	Jakarta Timur	Ciracas	3	5	5	5	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
26	Jakarta Timur	Cipayung	8	7	8	7	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	6	6	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Jakarta Selatan	Tebet	4	6	6	6	1	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0
28	Jakarta Selatan	Setia Budi	8	6	8	5	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0
29	Jakarta Selatan	Mampang Prapatan	4	3	5	4	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0
30	Jakarta Selatan	Pasar Minggu	6	6	6	6	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
31	Jakarta Selatan	Kebayoran Lama	5	6	4	6	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0
32	Jakarta Selatan	Cilandak	2	3	5	5	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	1	0	0	0
33	Jakarta Selatan	Kebayoran Baru	9	7	10	10	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0
34	Jakarta Selatan	Pancoran	6	5	6	5	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Jakarta Selatan	Jagakarsa	4	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
36	Jakarta Selatan	Pesangrahan	4	5	3	1	0	0	1	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
37	Jakarta Utara	Penjaringan	4	4	5	3	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
38	Jakarta Utara	Tanjung Priok	4	2	6	7	0	0	0	0	0	0	0	0	3	4	0	0	0	0	0	0	0	0	0	1	1
39	Jakarta Utara	Koja	4	5	6	6	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
40	Jakarta Utara	Cilincing	6	6	5	6	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1	0
41	Jakarta Utara	Pademangan	0	1	3	3	0	0	0	0	0	0	0	0	2	1	0	0	1	0	0	0	0	0	0	1	0
42	Jakarta Utara	Kelapa Gading	1	3	3	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
		Total	201	216	245	229	2	3	5	9	0	0	0	0	30	24	9	4	5	1	0	0	18	8	0	2	10

Number of Answer

			4-3															
			Who has the ownership of your house?															
			Single Choice															
			1				2				3				4			
			My family				Rental				Public agency				Others			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	5	6	7	6	2	1	0	0	1	0	0	0	0	0	0	0
2	Jakarta Barat	Taman Sari	7	6	7	7	1	2	0	0	0	0	0	1	0	0	1	0
3	Jakarta Barat	Tambora	9	11	9	9	1	0	0	1	1	0	1	0	0	0	1	1
4	Jakarta Barat	Kebon Jeruk	6	7	7	7	1	0	0	0	0	0	0	0	0	0	0	0
5	Jakarta Barat	Palmerah	1	5	6	5	4	0	0	0	0	0	0	1	1	1	0	0
6	Jakarta Barat	Kembangan	6	5	6	6	0	1	0	0	0	0	0	0	0	0	0	0
7	Jakarta Barat	Cengkareng	5	5	6	6	1	1	0	0	0	0	0	0	0	0	0	0
8	Jakarta Barat	Kalideres	4	5	5	4	1	0	0	0	0	0	0	0	0	0	0	1
9	Jakarta Pusat	Gambir	1	4	5	4	3	1	0	0	2	1	1	2	0	0	0	0
10	Jakarta Pusat	Kemayoran	6	8	8	8	1	0	0	0	0	0	0	0	1	0	0	0
11	Jakarta Pusat	Senen	5	4	6	5	0	1	0	0	0	1	0	1	1	0	0	0
12	Jakarta Pusat	Cempaka Putih	1	3	3	2	2	0	0	0	0	0	0	1	0	0	0	0
13	Jakarta Pusat	Menteng	4	4	5	5	0	0	0	0	1	1	0	0	0	0	0	0
14	Jakarta Pusat	Tanah Abang	5	7	6	6	1	0	1	0	1	0	0	1	0	0	0	0
15	Jakarta Pusat	Johar Baru	4	4	4	2	0	0	0	0	0	0	0	2	0	0	0	0
16	Jakarta Pusat	Sawah Besar	4	4	5	5	1	1	0	0	0	0	0	0	0	0	0	0
17	Jakarta Timur	Matraman	6	5	5	4	0	1	1	1	0	0	0	1	0	0	0	0
18	Jakarta Timur	Pulo Gadung	5	5	5	6	2	0	1	0	0	2	1	1	0	0	0	0
19	Jakarta Timur	Cakung	3	5	6	7	3	2	0	0	0	1	0	1	0	0	0	0
20	Jakarta Timur	Jatinegara	8	7	8	8	0	0	0	0	0	1	0	0	0	0	0	0
21	Jakarta Timur	Kramat	7	4	7	7	0	2	0	0	0	0	0	0	1	0	0	0
22	Jakarta Timur	Pasar Rebo	5	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0
23	Jakarta Timur	Duren Sawit	4	6	5	5	2	0	1	0	0	0	0	1	0	0	0	0
24	Jakarta Timur	Makasar	5	4	5	5	0	1	0	0	0	0	0	0	0	0	0	0
25	Jakarta Timur	Ciracas	4	5	5	5	1	0	0	0	0	0	0	0	0	0	0	0
26	Jakarta Timur	Cipayung	8	7	8	6	0	1	0	0	0	0	0	0	0	0	0	2
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	6	6	6	1	0	0	0	0	0	0	0	0	0	0	0	0
27	Jakarta Selatan	Tebet	4	6	6	6	2	1	1	1	1	0	0	0	0	0	0	0
28	Jakarta Selatan	Setia Budi	7	6	8	5	0	1	0	1	0	1	0	2	1	0	0	0
29	Jakarta Selatan	Mampang Prapatan	4	4	5	4	1	0	0	1	0	0	0	0	1	0	0	0
30	Jakarta Selatan	Pasar Minggu	6	5	6	7	1	0	0	0	0	0	0	0	2	1	0	0
31	Jakarta Selatan	Kebayoran Lama	6	6	5	5	0	0	1	1	0	0	0	0	0	0	0	0
32	Jakarta Selatan	Cilandak	3	3	5	5	1	1	0	0	0	0	0	1	1	0	0	0
33	Jakarta Selatan	Kebayoran Baru	10	9	10	10	0	1	0	0	0	0	0	0	0	0	0	0
34	Jakarta Selatan	Pancoran	6	5	5	6	0	0	0	0	0	0	0	0	1	1	0	0
35	Jakarta Selatan	Jagakarsa	3	3	5	4	1	0	0	0	1	0	0	1	1	3	1	1
36	Jakarta Selatan	Pesanggrahan	5	5	3	2	0	0	1	1	0	0	0	2	0	0	1	0
37	Jakarta Utara	Penjaringan	4	4	5	3	1	1	0	0	0	0	0	2	0	0	0	0
38	Jakarta Utara	Tanjung Priok	4	2	7	7	3	4	0	0	0	1	0	0	0	0	0	0
39	Jakarta Utara	Koja	5	3	6	6	1	3	0	0	0	0	0	0	0	0	0	0
40	Jakarta Utara	Cilincing	6	6	5	6	0	0	2	0	1	1	0	1	0	0	0	0
41	Jakarta Utara	Pademangan	0	1	3	3	3	1	0	0	0	0	0	0	1	0	0	0
42	Jakarta Utara	Kelapa Gading	1	3	3	2	2	0	0	0	0	0	0	1	0	0	0	0
		Total	208	218	247	227	43	28	9	8	8	9	4	21	7	11	6	5

Number of Answer (average of related Kelurahan)

			4-4							
			How many family members are there in your family?							
			Free							
			1				2			
			Adult				Child			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	4	6	5	4	1	1	2	2
2	Jakarta Barat	Taman Sari	3	6	5	3	2	4	2	1
3	Jakarta Barat	Tambora	6	5	6	4	2	2	2	1
4	Jakarta Barat	Kebon Jeruk	5	4	5	4	2	1	1	1
5	Jakarta Barat	Palmerah	3	4	3	3	2	1	2	2
6	Jakarta Barat	Kembangan	3	3	5	4	1	2	1	2
7	Jakarta Barat	Cengkareng	4	3	4	4	1	2	1	2
8	Jakarta Barat	Kalideres	4	4	4	3	2	1	2	2
9	Jakarta Pusat	Gambir	7	4	4	3	3	1	1	1
10	Jakarta Pusat	Kemayoran	6	5	3	4	2	2	0	1
11	Jakarta Pusat	Senen	5	6	7	5	2	3	2	1
12	Jakarta Pusat	Cempaka Putih	6	3	3	3	2	2	1	1
13	Jakarta Pusat	Menteng	4	3	7	4	2	1	2	1
14	Jakarta Pusat	Tanah Abang	3	5	4	3	1	3	1	1
15	Jakarta Pusat	Johar Baru	5	4	3	4	1	3	2	1
16	Jakarta Pusat	Sawah Besar	8	4	4	4	1	1	1	1
17	Jakarta Timur	Matraman	5	5	3	4	1	1	1	1
18	Jakarta Timur	Pulo Gadung	4	3	4	3	2	2	2	2
19	Jakarta Timur	Cakung	4	3	3	4	1	1	1	0
20	Jakarta Timur	Jatinegara	4	4	4	4	1	1	1	3
21	Jakarta Timur	Kramat	4	4	4	4	1	1	3	2
22	Jakarta Timur	Pasar Rebo	3	4	3	3	1	1	1	1
23	Jakarta Timur	Duren Sawit	3	4	2	4	1	0	1	2
24	Jakarta Timur	Makasar	3	3	4	2	1	1	1	2
25	Jakarta Timur	Ciracas	4	4	3	4	1	1	1	1
26	Jakarta Timur	Cipayung	4	4	3	4	2	1	1	2
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	4	4	5	2	1	0	0	0
27	Jakarta Selatan	Tebet	3	3	4	3	1	1	3	1
28	Jakarta Selatan	Setia Budi	5	4	4	3	1	3	1	1
29	Jakarta Selatan	Mampang Prapatan	3	7	3	5	1	1	2	2
30	Jakarta Selatan	Pasar Minggu	5	3	4	4	2	2	1	1
31	Jakarta Selatan	Kebayoran Lama	4	3	4	3	1	1	1	1
32	Jakarta Selatan	Cilandak	3	3	3	4	1	1	2	1
33	Jakarta Selatan	Kebayoran Baru	4	4	5	4	1	1	1	1
34	Jakarta Selatan	Pancoran	3	4	4	3	1	1	2	2
35	Jakarta Selatan	Jagakarsa	4	4	5	4	1	3	1	1
36	Jakarta Selatan	Pesanggrahan	3	3	7	3	1	1	1	1
37	Jakarta Utara	Penjaringan	3	3	4	4	1	1	2	1
38	Jakarta Utara	Tanjung Priok	4	3	5	4	2	1	2	1
39	Jakarta Utara	Koja	5	4	7	5	1	1	2	1
40	Jakarta Utara	Cilincing	5	4	5	4	2	2	1	1
41	Jakarta Utara	Pademangan	4	4	4	4	1	3	1	1
42	Jakarta Utara	Kelapa Gading	4	6	3	3	2	1	1	1
Average			4	4	4	4	1	2	1	1

Number of Answer

Choice of Answer

H	1) Less than Rp. 10,999,999	2) Rp. 11,000,000 – 11,999,999	3) Rp. 12,000,000 – 12,999,999	4) Rp. 13,000,000 – 13,999,999	5) More than Rp. 14,000,000
M and K	1) Less than Rp. 3,999,999	2) Rp. 4,000,000 – 4,999,999	3) Rp. 5,000,000 – 5,999,999	4) Rp. 6,000,000 – 6,999,999	5) More than Rp. 7,000,000
L	1) Less than Rp. 999,999	2) Rp. 1,000,000 – 1,999,999	3) Rp. 2,000,000 – 2,999,999	4) Rp. 3,000,000 – 3,999,999	5) More than Rp. 4,000,000

		4-5																							
		How much is the total monthly income of your family?																							
		Single Choice																							
		1				2				3				4				5							
No.	Wilayah	Kecamatan				L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	1	5	6	1	1	1	0	1	0	0	0	0	2	0	0	0	1	5	1	1	2		
2	Jakarta Barat	Taman Sari	1	5	8	1	1	2	0	0	0	0	0	3	1	1	0	1	5	0	0	0	3		
3	Jakarta Barat	Tambora	2	9	11	1	3	1	0	4	3	1	0	2	0	0	0	2	3	0	0	0	2		
4	Jakarta Barat	Kebon Jeruk	0	5	7	0	2	2	0	1	0	0	0	1	2	0	0	1	3	0	0	0	4		
5	Jakarta Barat	Palmerah	1	4	6	0	1	2	0	0	0	0	0	1	1	0	0	1	3	0	0	0	4		
6	Jakarta Barat	Kembangan	2	4	6	1	0	2	0	1	0	0	0	1	0	0	0	1	4	0	0	0	2		
7	Jakarta Barat	Cengkareng	1	4	6	0	2	1	0	0	0	1	0	0	1	0	0	1	2	0	0	0	5		
8	Jakarta Barat	Kalideres	2	4	2	3	0	0	3	1	0	0	0	0	0	1	0	1	3	0	0	0	0		
9	Jakarta Pusat	Gambir	2	4	3	5	1	2	1	0	0	0	1	0	2	0	0	1	1	0	1	2	2		
10	Jakarta Pusat	Kemayoran	2	3	3	0	2	2	3	5	1	0	0	1	0	1	1	0	3	2	1	1	2		
11	Jakarta Pusat	Senen	2	4	3	1	1	1	1	2	0	1	0	0	0	0	0	1	3	0	0	2	2		
12	Jakarta Pusat	Cempaka Putih	1	1	2	0	0	1	1	1	1	0	0	0	1	0	0	0	0	1	0	0	2		
13	Jakarta Pusat	Menteng	0	3	0	1	3	2	3	0	0	0	0	2	2	0	0	2	0	0	2	0	0		
14	Jakarta Pusat	Tanah Abang	1	3	4	0	0	1	2	1	1	2	0	0	1	0	0	1	4	1	1	1	5		
15	Jakarta Pusat	Johar Baru	3	2	1	1	1	2	1	0	0	0	0	2	0	0	2	0	0	0	0	0	1		
16	Jakarta Pusat	Sawah Besar	0	5	5	0	1	0	0	1	2	0	0	1	1	0	0	2	1	0	0	0	1		
17	Jakarta Timur	Matraman	1	4	5	2	3	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	4		
18	Jakarta Timur	Pulo Gadung	1	3	7	3	0	2	0	1	0	1	0	2	0	0	0	0	6	1	0	0	1		
19	Jakarta Timur	Cakung	0	2	7	0	3	3	0	0	1	1	0	0	2	0	0	1	1	1	0	0	6		
20	Jakarta Timur	Jatinegara	1	6	8	0	0	0	0	0	0	0	0	1	0	1	0	0	7	1	0	0	7		
21	Jakarta Timur	Kramat	3	5	6	2	1	1	0	2	0	0	0	0	1	1	0	1	2	0	1	1	2		
22	Jakarta Timur	Pasar Rebo	0	1	4	0	0	2	0	2	1	0	1	0	0	1	0	1	4	1	0	0	2		
23	Jakarta Timur	Duren Sawit	1	4	6	1	0	0	0	0	0	0	0	1	0	1	0	0	5	1	0	0	4		
24	Jakarta Timur	Makasar	0	3	5	1	0	0	0	0	0	1	0	1	0	1	0	1	5	0	0	0	2		
25	Jakarta Timur	Ciracas	1	2	5	0	1	0	0	1	0	0	0	0	1	0	0	0	2	3	0	0	4		
26	Jakarta Timur	Cipayung	0	6	7	2	1	1	1	0	1	0	0	1	2	0	0	0	4	1	0	0	5		
23*	Jakarta Timur	Duren Sawit (Makka Sari)	1	2	4	0	2	1	1	0	0	1	1	0	0	0	0	0	3	2	0	0	1		
27	Jakarta Selatan	Tebet	0	3	3	0	1	1	2	2	0	1	0	1	3	1	0	2	3	1	2	2	2		
28	Jakarta Selatan	Setia Budi	0	4	5	2	0	0	2	1	0	1	0	3	0	1	1	2	8	2	0	0	0		
29	Jakarta Selatan	Mampang Prapatan	2	5	5	1	3	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2		
30	Jakarta Selatan	Pasar Minggu	1	5	7	1	0	0	0	4	1	1	0	1	1	0	0	0	4	1	0	0	1		
31	Jakarta Selatan	Kebayoran Lama	0	2	6	2	0	1	0	0	0	0	0	1	0	0	0	1	6	3	0	0	2		
32	Jakarta Selatan	Cilandak	1	4	5	1	2	0	0	3	0	1	0	0	1	0	0	1	1	0	0	0	0		
33	Jakarta Selatan	Kebayoran Baru	1	4	8	2	3	2	1	1	0	1	1	0	0	0	0	1	6	3	0	0	6		
34	Jakarta Selatan	Pancoran	0	2	3	2	0	3	0	1	1	0	0	2	0	0	0	1	5	1	3	0	0		
35	Jakarta Selatan	Jagakarsa	2	6	5	2	1	0	0	1	1	0	0	2	0	0	0	0	2	0	1	1	1		
36	Jakarta Selatan	Pesangrahan	1	1	5	1	0	1	0	2	1	1	0	1	0	1	0	1	3	1	0	0	0		
37	Jakarta Utara	Penjaringan	1	3	4	2	2	2	1	0	0	0	0	0	0	0	0	1	2	0	0	0	2		
38	Jakarta Utara	Tanjung Priok	0	5	5	0	1	2	0	1	1	0	2	3	3	0	0	1	2	0	0	0	2		
39	Jakarta Utara	Koja	1	5	4	1	0	0	1	0	0	0	1	1	1	0	0	0	4	1	0	0	4		
40	Jakarta Utara	Cilincing	0	6	5	1	0	0	1	2	0	0	0	1	1	0	0	2	6	1	1	1	1		
41	Jakarta Utara	Pademangan	0	3	3	0	0	0	0	0	0	0	0	1	1	0	0	1	2	0	0	0	1		
42	Jakarta Utara	Kelapa Gading	0	0	1	0	0	2	2	0	0	1	0	2	1	0	0	1	2	0	0	0	0		
Total			40	161	211	42	43	46	27	43	16	16	7	42	31	12	4	35	136	31	17	99			





Number of Answer

			4-7							
			Please select your gender.							
			Single Choice							
			1				2			
			Male				Female			
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	3	3	4	7	4	4	3	0
2	Jakarta Barat	Taman Sari	3	2	6	6	5	6	2	2
3	Jakarta Barat	Tambora	6	2	5	10	5	9	6	1
4	Jakarta Barat	Kebon Jeruk	3	5	4	5	4	2	3	2
5	Jakarta Barat	Palmerah	3	3	4	4	3	3	2	2
6	Jakarta Barat	Kembangan	0	4	1	4	6	2	5	2
7	Jakarta Barat	Cengkareng	5	5	4	5	1	1	2	1
8	Jakarta Barat	Kalideres	3	3	4	5	2	2	1	0
9	Jakarta Pusat	Gambir	3	3	2	6	3	3	4	0
10	Jakarta Pusat	Kemayoran	3	3	4	5	5	5	4	3
11	Jakarta Pusat	Senen	2	2	5	4	4	4	1	2
12	Jakarta Pusat	Cempaka Putih	0	0	2	3	3	3	1	0
13	Jakarta Pusat	Menteng	5	3	2	2	0	2	3	3
14	Jakarta Pusat	Tanah Abang	2	4	4	7	5	3	3	0
15	Jakarta Pusat	Johar Baru	1	2	2	3	3	2	2	1
16	Jakarta Pusat	Sawah Besar	3	4	3	4	2	1	2	1
17	Jakarta Timur	Matraman	5	3	3	6	1	3	3	0
18	Jakarta Timur	Pulo Gadung	4	6	5	4	3	1	2	3
19	Jakarta Timur	Cakung	3	3	5	7	4	4	2	0
20	Jakarta Timur	Jatinegara	6	8	7	8	2	0	1	0
21	Jakarta Timur	Kramat	6	4	5	5	1	3	2	2
22	Jakarta Timur	Pasar Rebo	3	3	0	3	2	2	5	2
23	Jakarta Timur	Duren Sawit	2	2	4	2	4	4	2	4
24	Jakarta Timur	Makasar	2	3	4	4	3	2	1	1
25	Jakarta Timur	Ciracas	2	2	5	5	3	3	0	0
26	Jakarta Timur	Cipayung	5	4	4	7	3	4	4	1
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	2	3	5	1	4	3	1	0
27	Jakarta Selatan	Tebet	6	3	5	5	1	4	2	2
28	Jakarta Selatan	Setia Budi	3	5	5	4	5	3	3	4
29	Jakarta Selatan	Mampang Prapatan	4	3	2	5	1	2	3	0
30	Jakarta Selatan	Pasar Minggu	5	4	1	5	2	3	6	2
31	Jakarta Selatan	Kebayoran Lama	5	4	1	5	1	2	5	1
32	Jakarta Selatan	Cilandak	2	1	4	3	3	4	1	2
33	Jakarta Selatan	Kebayoran Baru	5	2	5	8	5	8	5	2
34	Jakarta Selatan	Pancoran	2	4	5	3	4	2	1	3
35	Jakarta Selatan	Jagakarsa	3	4	2	3	3	2	4	3
36	Jakarta Selatan	Pesanggrahan	2	5	3	4	3	0	2	1
37	Jakarta Utara	Penjaringan	3	2	4	5	2	3	1	0
38	Jakarta Utara	Tanjung Priok	6	6	4	4	1	1	3	3
39	Jakarta Utara	Koja	4	3	3	5	2	3	3	1
40	Jakarta Utara	Cilincing	6	5	5	5	1	2	2	2
41	Jakarta Utara	Pademangan	2	3	2	1	1	0	1	2
42	Jakarta Utara	Kelapa Gading	2	2	3	2	1	1	0	1
Total			145	145	157	199	121	121	109	62

Number of Answer

4-2

Which housing type is applied to your house?

Single Choice

No.	Wilayah	Kecamatan	Single Choice																							
			1				2				3				4				5				6			
			Less than 20 years old				21-30 years old				31-40 years old				41-50 years old				51-60 years old				More than 61 years old			
L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K			
1	Jakarta Barat	Grogol Petamburan	0	0	0	0	1	0	2	0	2	2	2	1	2	3	1	4	2	2	1	2	0	0	1	0
2	Jakarta Barat	Taman Sari	0	0	0	0	1	4	0	2	3	2	1	1	0	1	4	5	2	1	1	0	2	0	2	0
3	Jakarta Barat	Tambora	0	0	0	0	1	0	2	3	4	5	2	0	3	3	2	4	3	3	3	4	0	0	2	0
4	Jakarta Barat	Kebon Jeruk	0	0	0	0	1	1	0	1	1	1	0	0	2	3	3	4	3	1	3	2	0	1	1	0
5	Jakarta Barat	Palmerah	0	0	0	0	0	0	2	0	2	2	0	1	3	0	1	5	1	2	2	0	0	2	1	0
6	Jakarta Barat	Kembangan	0	0	0	0	3	0	2	0	0	0	1	1	2	3	0	3	1	3	2	2	0	0	1	0
7	Jakarta Barat	Cengkareng	0	0	0	0	1	0	1	0	3	3	1	1	1	2	1	5	1	1	3	0	0	0	0	0
8	Jakarta Barat	Kalideres	0	0	0	0	1	0	0	0	0	0	2	2	3	2	1	2	1	1	2	1	0	2	0	0
9	Jakarta Pusat	Gambir	0	0	0	0	1	0	1	0	0	1	1	2	5	4	2	1	0	0	0	3	0	1	2	0
10	Jakarta Pusat	Kemayoran	0	0	0	0	1	2	1	1	2	2	1	0	3	2	4	6	1	1	1	1	1	1	1	0
11	Jakarta Pusat	Senen	0	0	0	0	0	0	1	3	2	2	0	1	2	2	1	2	2	2	0	0	0	0	4	0
12	Jakarta Pusat	Cempaka Putih	0	0	0	0	0	0	0	1	1	2	0	0	1	1	1	1	1	0	1	1	0	0	1	0
13	Jakarta Pusat	Menteng	0	0	0	0	0	0	0	2	2	2	0	1	0	0	2	1	3	2	3	1	0	1	0	0
14	Jakarta Pusat	Tanah Abang	0	0	0	0	0	1	0	0	4	1	0	0	2	3	2	5	0	2	1	2	1	0	4	0
15	Jakarta Pusat	Johar Baru	0	0	0	0	0	0	0	0	1	2	1	0	1	1	2	0	2	0	1	4	0	1	0	0
16	Jakarta Pusat	Sawah Besar	0	0	0	0	0	0	0	1	0	1	2	1	2	2	0	1	2	1	3	2	1	1	0	0
17	Jakarta Timur	Matraman	0	0	0	0	1	1	0	0	2	1	1	1	1	3	1	1	2	1	4	4	0	0	0	0
18	Jakarta Timur	Pulo Gadung	0	0	0	0	2	2	0	0	1	1	2	2	4	2	3	3	0	2	2	2	0	0	0	0
19	Jakarta Timur	Cakung	0	0	0	0	1	0	1	0	2	3	0	0	2	4	3	4	2	0	3	3	0	0	0	0
20	Jakarta Timur	Jatinegara	0	0	0	0	0	0	0	0	2	0	0	1	2	2	5	5	3	4	1	2	1	2	2	0
21	Jakarta Timur	Kramat	0	0	0	0	1	1	1	1	2	3	3	1	2	3	1	4	2	0	2	1	0	0	0	0
22	Jakarta Timur	Pasar Rebo	1	0	0	1	1	1	0	2	1	1	3	0	0	2	1	1	2	1	0	1	0	0	1	0
23	Jakarta Timur	Duren Sawit	0	1	0	0	3	1	3	1	2	1	1	1	1	2	1	2	0	1	1	2	0	0	0	0
24	Jakarta Timur	Makasar	0	0	0	0	3	0	1	0	0	1	0	2	1	3	2	2	1	0	2	1	0	1	0	0
25	Jakarta Timur	Ciracas	0	0	0	0	2	1	2	0	1	0	0	0	0	2	1	2	2	2	3	0	0	0	0	0
26	Jakarta Timur	Cipayang	0	0	0	0	2	1	0	0	2	3	4	1	2	1	4	4	1	1	0	3	1	2	0	0
23*	Jakarta Timur	Duren Sawit (Makaka Sari)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	2	0	4	4	2	0
27	Jakarta Selatan	Tebet	0	0	0	0	1	0	1	1	1	2	1	1	2	3	2	2	1	2	3	3	2	0	0	0
28	Jakarta Selatan	Setia Budi	0	0	0	0	1	2	1	2	2	0	1	1	2	3	2	4	2	1	3	1	1	2	1	0
29	Jakarta Selatan	Mampang Prapatan	0	0	0	0	0	0	0	0	0	1	1	1	4	3	2	2	1	1	2	2	0	0	0	0
30	Jakarta Selatan	Pasar Minggu	0	0	0	0	0	0	1	2	3	2	2	1	1	2	2	4	2	2	1	0	1	1	1	0
31	Jakarta Selatan	Kebayoran Lama	0	0	0	0	1	1	1	2	1	2	2	1	1	2	1	2	3	1	2	1	0	0	0	0
32	Jakarta Selatan	Cilandak	0	0	0	0	0	0	0	1	1	2	0	0	3	2	5	2	1	1	0	2	0	0	0	0
33	Jakarta Selatan	Kebayoran Baru	0	0	0	0	0	2	1	0	0	2	2	1	7	4	3	4	3	2	4	5	0	0	0	0
34	Jakarta Selatan	Pancoran	1	0	0	0	0	0	0	2	0	1	2	1	2	3	0	3	2	2	3	0	1	0	1	0
35	Jakarta Selatan	Jagakarsa	0	0	0	0	1	0	0	0	0	1	0	0	4	4	2	2	1	0	3	3	0	1	1	1
36	Jakarta Selatan	Pesanggrahan	0	0	0	0	1	1	2	0	3	1	1	1	1	2	0	2	0	1	2	2	0	0	0	0
37	Jakarta Utara	Penjaringan	1	0	0	0	0	2	1	1	2	0	1	1	1	2	0	1	1	1	3	2	0	0	0	0
38	Jakarta Utara	Tanjung Priok	0	0	0	0	1	0	2	0	3	3	0	0	2	2	3	4	0	2	1	3	1	0	1	0
39	Jakarta Utara	Koja	0	0	0	0	1	2	0	1	1	0	0	0	2	3	6	2	1	1	0	3	1	0	0	0
40	Jakarta Utara	Cilincing	0	0	0	0	1	1	0	1	2	1	1	0	3	3	3	4	1	1	3	2	0	1	0	0
41	Jakarta Utara	Pademangan	0	0	0	0	1	1	1	0	1	2	2	2	0	0	0	1	1	0	0	0	0	0	0	0
42	Jakarta Utara	Kelapa Gading	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	1	1	2	0	2	0	1	2	0
		Total	3	1	0	1	37	28	31	31	63	62	44	32	83	95	83	118	62	55	76	78	18	25	32	1

Number of Answer

		4-9																																								
		What is your job?																																								
		Single Choice																																								
		1				2				3				4				5				6				7				8				9								
		Office worker (full time)				Self-employed				Public official (full time)				Farmer				Fisher				Part-time worker				Retired or Unemployed				House keeper				Others								
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	0	0	1	1	0	4	2	0	0	0	1	6	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	2	3	1	0	4	0	1	0	
2	Jakarta Barat	Taman Sari	0	1	1	0	3	2	3	0	0	0	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	4	1	0	1	1	1	0		
3	Jakarta Barat	Tambora	0	0	0	0	4	6	5	0	0	0	1	11	0	0	0	0	0	0	0	0	0	2	1	0	0	1	0	1	0	2	4	3	0	2	0	1	0			
4	Jakarta Barat	Kebon Jeruk	0	0	0	0	3	1	1	0	0	1	3	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	2	1	1	0	2	1	1	0			
5	Jakarta Barat	Palmerah	0	1	0	0	0	1	1	0	0	0	0	5	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	3	0	3	3	2	0	2	1	0	0			
6	Jakarta Barat	Kembangan	1	0	0	0	3	3	0	0	0	0	1	6	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	2	1	3	0	0	0	1	0			
7	Jakarta Barat	Cengkareng	0	0	1	0	3	5	3	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	2	0	1	0	0			
8	Jakarta Barat	Kalderes	0	0	0	1	0	1	4	0	0	0	1	4	0	0	0	0	0	0	0	0	0	1	1	0	0	0	3	0	1	0	0	3	0	0	0	0				
9	Jakarta Pusat	Gambir	1	0	0	0	1	3	2	0	0	0	0	6	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	0	2	1	2	0	1	1	0	0				
10	Jakarta Pusat	Kemayoran	0	0	1	0	1	1	4	0	0	4	0	7	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	3	2	2	0	3	0	1	1	0				
11	Jakarta Pusat	Senen	0	0	0	0	2	1	2	0	0	0	0	6	0	0	0	0	0	0	0	0	0	1	0	0	0	2	2	0	4	3	0	0	0	0	1	0				
12	Jakarta Pusat	Cempaka Putih	0	0	1	0	1	1	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	1	0	1	0	0				
13	Jakarta Pusat	Menteng	0	0	0	0	2	3	5	0	0	0	0	5	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2	1	0	0	0					
14	Jakarta Pusat	Tanah Abang	0	1	1	0	1	2	2	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4	3	2	0	1	1	0	0					
15	Jakarta Pusat	Johar Baru	0	0	0	0	0	3	0	0	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	0	1	0	0	0	0				
16	Jakarta Pusat	Sawah Besar	0	0	0	0	4	3	4	0	0	0	0	5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0				
17	Jakarta Timur	Matraman	1	0	0	0	1	3	1	0	0	2	0	6	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	1	1	2	0	1	0	1	0	0				
18	Jakarta Timur	Pulo Gadung	1	2	0	0	3	1	4	0	0	4	1	7	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0				
19	Jakarta Timur	Cakung	0	1	1	0	2	1	3	0	0	2	3	7	0	0	0	0	0	0	0	0	2	1	0	0	0	0	2	2	0	0	1	0	0	1	0	0				
20	Jakarta Timur	Jatinegara	1	0	1	0	4	2	4	0	0	2	2	8	0	0	0	0	0	0	0	0	2	0	0	0	1	3	0	0	0	1	0	0	1	0	0	0				
21	Jakarta Timur	Kramat	1	0	0	0	4	4	4	0	0	2	1	4	0	0	0	0	0	0	0	1	2	0	0	2	0	0	0	0	1	1	0	0	0	1	0	0				
22	Jakarta Timur	Pasar Rebo	1	1	0	0	1	3	0	0	2	0	2	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	0	1	0	0	0				
23	Jakarta Timur	Duren Sawit	0	0	1	0	2	2	2	0	0	1	1	6	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	1	1	0	0	1	1	0	1	1	0			
24	Jakarta Timur	Makasar	0	1	0	0	0	2	1	0	1	1	2	5	0	0	0	0	0	0	0	0	3	0	1	0	1	0	0	0	1	1	0	0	0	0	0	0				
25	Jakarta Timur	Ciracas	1	0	0	0	0	2	3	0	0	2	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	1	0	0	0	0	0				
26	Jakarta Timur	Cipayang	0	0	1	1	1	3	4	0	0	0	1	7	0	0	0	0	0	0	0	0	4	0	0	0	1	2	1	0	1	3	1	0	1	0	0	0				
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	1	0	1	2	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	4	3	3	0	1	1	0	0	0	0	0	0				
27	Jakarta Selatan	Tebet	0	1	2	0	0	2	3	0	0	0	2	7	0	0	0	0	0	0	0	1	0	0	0	2	1	0	0	1	3	0	0	3	0	0	0	0				
28	Jakarta Selatan	Setia Budi	0	0	0	1	2	3	1	0	0	1	3	7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	1	2	0	1	2	0	1	2	0			
29	Jakarta Selatan	Mampang Prapatan	0	1	0	0	4	3	2	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0				
30	Jakarta Selatan	Pasar Minggu	2	0	0	1	1	2	1	0	0	0	0	6	0	1	0	0	0	0	0	0	0	0	1	0	2	1	0	0	1	3	4	0	1	0	1	0				
31	Jakarta Selatan	Kebayoran Lama	0	0	0	1	3	3	1	0	1	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4	0	2	1	1	0				
32	Jakarta Selatan	Cilandak	1	1	0	0	3	0	4	0	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	1	0	0	0	0	0	0				
33	Jakarta Selatan	Kebayoran Baru	1	0	0	0	5	3	6	1	0	1	1	8	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	5	3	0	2	0	0	0	0					
34	Jakarta Selatan	Pancoran	0	0	2	1	2	2	4	0	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	2	0	0	2	0	0	0				
35	Jakarta Selatan	Jagakarsa	1	0	0	1	1	1	2	0	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	4	0	3	1	0	0	0				
36	Jakarta Selatan	Pesangrahan	0	1	0	0	0	3	3	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	2	1	0	0	1	0				
37	Jakarta Utara	Penjaringan	0	0	0	0	1	1	3	1	1	1	1	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	2	0	0	1	1	0	0	0				
38	Jakarta Utara	Tanjung Priok	0	0	0	0	2	4	3	0	0	1	0	7	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	0	3	1	0	0				
39	Jakarta Utara	Koja	0	2	1	0	4	1	2	0	0	1	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	1	1	0	0	0	0				
40	Jakarta Utara	Cilincing	0	1	0	0	3	1	3	0	0	0	0	7	0	0	0	0	0	0	0	1	0	0	1	2	1	0	0	1	1	2	0	2	0	1	0	0				
41	Jakarta Utara	Pademangan	0	1	0	0	3	1	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0				
42	Jakarta Utara	Kelapa Gading	2	1	0	0	0	0	2	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0			
		Total	15	17	16	8	81	95	106	2	5	32	39	242	0	1	0	1	0	1	0	1	0	1	27	12	6	2	18	25	26	3	67	66	56	0	53	17	17	2		

Number of Answer

		4-10																																								
		What is your academic background?																																								
		Single Choice																																								
		1				2				3				4				5				6				7				8				9								
		Not Finished the elementary school				Finished the elementary school				Not finished the junior high school				Finished the junior high school				Not finished the high school				Finished the high school				Not finished the university				Finished the university				Others								
No.	Wilayah	Kecamatan	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K	L	M	H	K
1	Jakarta Barat	Grogol Petamburan	2	0	0	0	0	1	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	3	5	4	2	0	0	0	0	0	0	3	4	0	0	0	1			
2	Jakarta Barat	Taman Sari	1	1	0	0	3	0	1	0	0	0	0	0	1	0	2	0	0	0	0	0	0	3	5	2	0	0	0	0	1	0	2	3	7	0	0	0	0			
3	Jakarta Barat	Tambora	0	0	0	0	5	2	2	0	1	0	0	0	1	2	0	1	0	1	0	0	4	4	7	2	0	1	0	0	0	1	2	8	0	0	0	0				
4	Jakarta Barat	Kebon Jeruk	0	0	0	0	5	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	2	4	3	1	0	0	0	1	0	1	3	5	0	0	0	0				
5	Jakarta Barat	Palmerah	1	0	0	0	1	1	0	0	2	0	0	1	1	1	0	0	0	0	0	0	1	3	3	1	0	0	0	1	0	1	3	3	0	0	0	0				
6	Jakarta Barat	Kembangan	1	1	0	0	2	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	4	2	2	0	0	0	0	1	0	3	4	0	0	0	0				
7	Jakarta Barat	Cengkareng	2	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3	4	2	1	0	0	0	1	1	2	5	0	0	0	0					
8	Jakarta Barat	Kalideres	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3	3	1	4	0	0	0	0	1	3	1	0	0	0	0					
9	Jakarta Pusat	Gambir	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4	5	3	3	0	0	1	0	0	1	2	3	0	0	0	0				
10	Jakarta Pusat	Kemayoran	2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5	3	3	3	0	0	0	0	5	5	4	0	0	0	0					
11	Jakarta Pusat	Senen	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	2	1	0	1	0	0	1	0	4	5	1	0	0	0					
12	Jakarta Pusat	Cempaka Putih	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	2	3	1	0	0	0	0	0					
13	Jakarta Pusat	Menteng	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	4	2	1	0	0	0	0	1	3	4	0	0	0	0	0					
14	Jakarta Pusat	Tanah Abang	1	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	1	0	0	5	2	2	2	1	1	0	0	2	3	4	0	0	0	0	1					
15	Jakarta Pusat	Johar Baru	1	0	0	0	0	1	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	4	2	0	1	0	0					
16	Jakarta Pusat	Sawah Besar	1	1	0	0	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	3	4	0	1	0	0	0	0	0	5	0	0	0	0	0					
17	Jakarta Timur	Matraman	2	0	0	0	0	0	0	0	1	0	0	0	2	0	1	0	0	0	0	2	3	1	3	0	0	1	0	0	2	3	2	0	0	0	1					
18	Jakarta Timur	Pulo Gadung	0	0	0	0	1	0	0	0	0	0	0	2	1	0	0	0	0	1	4	3	5	4	0	0	0	0	3	2	2	0	0	0	0	0	0					
19	Jakarta Timur	Cakung	1	0	0	0	2	1	0	0	0	0	0	2	0	1	1	0	0	0	2	6	3	4	0	0	0	0	0	3	2	0	0	0	0	0	0					
20	Jakarta Timur	Jatinegara	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	1	1	0	6	6	4	4	0	0	1	0	0	1	1	4	0	0	0	0					
21	Jakarta Timur	Kramat	1	0	0	0	0	0	0	0	0	0	1	2	2	1	0	0	1	0	0	4	4	4	3	0	0	2	0	0	0	3	0	0	0	0	0					
22	Jakarta Timur	Pasar Rebo	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	2	1	0	0	1	0	1	2	2	4	4	0	0	0	0	0					
23	Jakarta Timur	Duren Sawit	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	3	1	2	0	0	0	1	1	5	4	0	0	0	0	0					
24	Jakarta Timur	Makasar	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	3	2	4	2	0	0	0	1	0	1	3	0	0	0	0	0					
25	Jakarta Timur	Ciracas	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	4	2	2	2	0	0	0	1	0	2	2	2	0	0	0	0	0					
26	Jakarta Timur	Cipayung	0	0	0	0	2	1	1	0	0	0	0	0	2	2	0	1	0	0	5	3	1	5	0	1	0	0	0	1	4	3	0	0	0	0	0					
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	1	0	0	2	2	0	0	1	0	0	2	2	2	1	0	0	0	0	0	0					
27	Jakarta Selatan	Tebet	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	4	5	3	2	0	1	0	0	0	1	4	5	0	0	0	0	0					
28	Jakarta Selatan	Setia Budi	0	1	0	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	6	1	2	2	0	0	0	0	4	5	5	0	0	0	0	1						
29	Jakarta Selatan	Mampang Prapatan	0	0	0	0	1	1	0	0	0	0	0	2	1	1	0	0	0	0	2	3	1	4	0	0	0	0	0	3	1	0	0	0	0	0	0					
30	Jakarta Selatan	Pasar Minggu	0	0	0	0	1	0	2	0	0	1	1	0	2	0	1	0	1	0	2	4	1	4	0	1	0	0	0	1	2	2	1	0	0	0	0					
31	Jakarta Selatan	Kebayoran Lama	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	0	0	0	0	1	1	2	2	0	0	0	0	0					
32	Jakarta Selatan	Cilandak	0	0	0	0	1	2	0	0	0	1	0	0	0	0	1	0	0	0	2	2	2	4	0	0	0	0	1	0	2	1	0	0	0	0	0					
33	Jakarta Selatan	Kebayoran Baru	0	0	1	0	1	0	0	0	0	0	0	2	1	1	0	1	1	0	5	4	4	3	0	2	0	0	1	2	4	7	0	0	0	0	0					
34	Jakarta Selatan	Pancoran	1	0	0	0	0	0	0	0	1	0	0	0	2	1	0	1	0	1	3	1	1	4	0	0	0	0	2	3	2	0	1	0	0	0	0					
35	Jakarta Selatan	Jagakarsa	0	0	0	0	1	0	0	0	0	0	0	1	3	0	0	0	0	0	3	3	3	3	1	0	2	1	0	0	1	2	0	0	0	0	0					
36	Jakarta Selatan	Pesanggrahan	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2	3	5	0	0	0	0	1	3	2	0	0	0	0	0	0					
37	Jakarta Utara	Penjaringan	0	1	0	0	2	0	0	0	1	0	0	0	1	1	0	0	0	0	2	3	2	1	0	0	0	0	0	0	2	4	0	0	0	0	0					
38	Jakarta Utara	Tanjung Priok	1	0	0	0	2	1	0	0	0	0	0	4	0	1	0	0	0	0	6	4	4	0	0	0	1	0	0	2	2	0	0	0	0	0	0					
39	Jakarta Utara	Koja	0	0	0	0	0	0	0	0	1	0	0	2	0	1	0	0	0	1	3	5	2	3	0	0	0	0	1	2	3	0	0	0	0	0	0					
40	Jakarta Utara	Ciilingcing	1	1	0	0	1	1	1	0	0	0	0	1	1	2	0	0	0	0	4	4	4	2	0	0	0	0	0	0	5	0	0	0	0	0	0					
41	Jakarta Utara	Pademangan	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	1	1	0	1	1	0	0	0	1	2	2	0	0	0	0	0	0					
42	Jakarta Utara	Kelapa Gading	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	3	0	2	0	0	1	0	0	1	1	0	0	0	0	0	0					
		Total	23	8	1	0	42	15	10	0	9	6	2	2	42	26	26	3	6	8	4	3	125	142	104	103	4	10	9	7	13	49	110	139	2	2	0	4				

Only for Leaders  
Number of Answer (average of related Kelerahan)

			4-11	
			How many people (both recorded and non-recorded) and household are there in your community?	
No.	Wilayah	Kecamatan	person	household
1	Jakarta Barat	Grogol Petamburan	24338	6802
2	Jakarta Barat	Taman Sari	18149	4635
3	Jakarta Barat	Tambora	21577	4659
4	Jakarta Barat	Kebon Jeruk	31918	7479
5	Jakarta Barat	Palmerah	33508	8903
6	Jakarta Barat	Kembangan	27416	8285
7	Jakarta Barat	Cengkareng	50167	16310
8	Jakarta Barat	Kalideres	50732	12702
9	Jakarta Pusat	Gambir	14985	4607
10	Jakarta Pusat	Kemayoran	24645	7058
11	Jakarta Pusat	Senen	18856	5243
12	Jakarta Pusat	Cempaka Putih	26058	4672
13	Jakarta Pusat	Menteng	14381	5019
14	Jakarta Pusat	Tanah Abang	20621	6157
15	Jakarta Pusat	Johar Baru	26156	6779
16	Jakarta Pusat	Sawah Besar	22832	8163
17	Jakarta Timur	Matraman	57596	18361
18	Jakarta Timur	Pulo Gadung	38010	12865
19	Jakarta Timur	Cakung	57502	15709
20	Jakarta Timur	Jatinegara	37207	10040
21	Jakarta Timur	Kramat	34711	7899
22	Jakarta Timur	Pasar Rebo	35214	7600
23	Jakarta Timur	Duren Sawit	53605	10741
24	Jakarta Timur	Makasar	40344	9683
25	Jakarta Timur	Ciracas	40053	9622
26	Jakarta Timur	Cipayung	23278	4384
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	37880	10591
27	Jakarta Selatan	Tebet	31756	9139
28	Jakarta Selatan	Setia Budi	13778	4151
29	Jakarta Selatan	Mampang Prapatan	32072	7385
30	Jakarta Selatan	Pasar Minggu	35982	7462
31	Jakarta Selatan	Kebayoran Lama	34613	9909
32	Jakarta Selatan	Cilandak	43758	10166
33	Jakarta Selatan	Kebayoran Baru	15895	4271
34	Jakarta Selatan	Pancoran	19945	5088
35	Jakarta Selatan	Jagakarsa	36216	8710
36	Jakarta Selatan	Pesanggrahan	40313	9660
37	Jakarta Utara	Penjaringan	45357	13299
38	Jakarta Utara	Tanjung Priok	46429	13200
39	Jakarta Utara	Koja	47506	12446
40	Jakarta Utara	Cilincing	36960	9472
41	Jakarta Utara	Pademangan	42132	13776
42	Jakarta Utara	Kelapa Gading	36417	11348
Average			33508	8941

Only for Leaders			4-12
Number of Answer (average of related Kelerahan)			How large is your community
No.	Wilayah	Kecamatan	ha
1	Jakarta Barat	Grogol Petamburan	161
2	Jakarta Barat	Taman Sari	55
3	Jakarta Barat	Tambora	87
4	Jakarta Barat	Kebon Jeruk	251
5	Jakarta Barat	Palmerah	122
6	Jakarta Barat	Kembangan	416
7	Jakarta Barat	Cengkareng	430
8	Jakarta Barat	Kalideres	587
9	Jakarta Pusat	Gambir	126
10	Jakarta Pusat	Kemayoran	151
11	Jakarta Pusat	Senen	74
12	Jakarta Pusat	Cempaka Putih	138
13	Jakarta Pusat	Menteng	129
14	Jakarta Pusat	Tanah Abang	178
15	Jakarta Pusat	Johar Baru	59
16	Jakarta Pusat	Sawah Besar	123
17	Jakarta Timur	Matraman	84
18	Jakarta Timur	Pulo Gadung	223
19	Jakarta Timur	Cakung	606
20	Jakarta Timur	Jatinegara	142
21	Jakarta Timur	Kramat	190
22	Jakarta Timur	Pasar Rebo	184
23	Jakarta Timur	Duren Sawit	355
24	Jakarta Timur	Makasar	437
25	Jakarta Timur	Ciracas	322
26	Jakarta Timur	Cipayung	356
23*	Jakarta Timur	Duren Sawit (Malaka Sari)	138
27	Jakarta Selatan	Tebet	116
28	Jakarta Selatan	Setia Budi	111
29	Jakarta Selatan	Mampang Prapatan	154
30	Jakarta Selatan	Pasar Minggu	310
31	Jakarta Selatan	Kebayoran Lama	317
32	Jakarta Selatan	Cilandak	363
33	Jakarta Selatan	Kebayoran Baru	130
34	Jakarta Selatan	Pancoran	142
35	Jakarta Selatan	Jagakarsa	413
36	Jakarta Selatan	Pesanggrahan	269
37	Jakarta Utara	Penjaringan	710
38	Jakarta Utara	Tanjung Priok	308
39	Jakarta Utara	Koja	208
40	Jakarta Utara	Cilincing	470
41	Jakarta Utara	Pademangan	397
42	Jakarta Utara	Kelapa Gading	497
Average			257

Result of Survey B

No.	Category	Question 1-2				
		Single choice				
		Story of building				
		1	2	3	4	5
		One-story	Two-story	Three-story	Four-story	More than five-story
1	shops	1				
2	shops		1			
3	shops	1				
4	shops					1
5	shops					1
6	shops					1
7	shops					1
8	shops					1
9	shops					1
10	shops					1
11	shops				1	
12	factory	1				
13	factory	1				
14	factory	1				
15	factory		1			
16	factory	1				
17	factory			1		
18	restaurant					
19	restaurant	1				
20	restaurant					1
21	hotel					1
22	hotel		1			
23	hotel					1
24	hotel					1
25	hotel				1	
26	hotel				1	
27	hotel					1
28	hotel					1
29	hotel					1
30	hotel					1
31	hospital			1		
32	hospital				1	
33	hospital				1	
34	hospital				1	
35	hospital					1
36	hospital					1
37	office		1			
38	office					1
39	office				1	
40	office					1
41	office					1
42	office					1
43	office					1
44	office					1
45	office					1
46	office					1
47	office					1
48	school					1
49	school					1
50	school					1
51	school					1
Total		7	5	1	7	30

Result of Survey B

No.	Category	Question 1-1	
		Free answer	
		Land area being occupied	
		[m2]	
1	shops		830
2	shops		3,495
3	shops		3,300
4	shops		60,000
5	shops		17,000
6	shops		10,000
7	shops		1,100
8	shops		13,000
9	shops		15,000
10	shops		10,686
11	shops		5,375
12	factory		1,000
13	factory		8,000
14	factory		40,250
15	factory		70,000
16	factory		
17	factory		43,685
18	restaurant		
19	restaurant		300
20	restaurant		8,325
21	hotel		2,978
22	hotel		2,680
23	hotel		1,001
24	hotel		1,000
25	hotel		2,216
26	hotel		1,852
27	hotel		9,000
28	hotel		13,800
29	hotel		68,107
30	hotel		12,225
31	hospital		65
32	hospital		900
33	hospital		5,500
34	hospital		6,559
35	hospital		10,000
36	hospital		12,000
37	office		11,109
38	office		12,000
39	office		1,600
40	office		1,533
41	office		3,610
42	office		12,689
43	office		6,437
44	office		12,400
45	office		10,340
46	office		26,000
47	office		10,444
48	school		899
49	school		2,000
50	school		22,800
51	school		8,379

No.	Category	Area	Remark
1	shops	Selatan	
2	shops	Utara	
3	shops	Timur	
4	shops	Selatan	
5	shops	Selatan	
6	shops	Utara	
7	shops	Selatan	
8	shops	Pusat	
9	shops	Selatan	
10	shops	Barat	
11	shops	Timur	
12	factory	Utara	
13	factory	Barat	
14	factory	Barat	
15	factory	Timur	
16	factory	Utara	
17	factory	Pusat	
18	restaurant	Selatan	Not Answered
19	restaurant	Utara	
20	restaurant	Timur	
21	hotel	Pusat	
22	hotel	Selatan	
23	hotel	Pusat	
24	hotel	Pusat	
25	hotel	Pusat	
26	hotel	Pusat	
27	hotel	Pusat	
28	hotel	Pusat	
29	hotel	Pusat	
30	hotel	Pusat	
31	hospital	Barat	
32	hospital	Pusat	
33	hospital	Barat	
34	hospital	Pusat	
35	hospital	Selatan	
36	hospital	Pusat	
37	office	Utara	
38	office	Timur	
39	office	Selatan	
40	office	Selatan	
41	office	Barat	
42	office	Selatan	
43	office	Pusat	
44	office	Selatan	
45	office	Selatan	
46	office	Selatan	
47	office	Selatan	
48	school	Barat	
49	school	Barat	
50	school	Selatan	
51	school	Selatan	



Result of Survey B

No.	Category	Question 1-4					
		Single choice					
		Capacity (accommodation)					
		1	2	3	4	5	6
	Less than 10 persons	Less than 20 persons	Less than 40 persons	Less than 80 persons	Less than 100 persons	More than 100 persons	
1	shops				1		
2	shops				1		
3	shops				1		
4	shops						1
5	shops						1
6	shops						1
7	shops						1
8	shops						1
9	shops						1
10	shops						1
11	shops						1
12	factory						1
13	factory				1		
14	factory			1			
15	factory						1
16	factory						1
17	factory						1
18	restaurant						1
19	restaurant				1		
20	restaurant						1
21	hotel						1
22	hotel						1
23	hotel						1
24	hotel						1
25	hotel						1
26	hotel						1
27	hotel						1
28	hotel						1
29	hotel						1
30	hotel						1
31	hospital			1			
32	hospital				1		
33	hospital						1
34	hospital						1
35	hospital						1
36	hospital						1
37	office						1
38	office						1
39	office					1	
40	office						1
41	office						1
42	office						1
43	office						1
44	office						1
45	office						1
46	office						1
47	office						1
48	school						1
49	school						1
50	school						1
51	school						1
Total		0	0	2	5	2	41

Result of Survey B

No.	Category	Question 1-3	
		Free answer	
		Total Floor Area	
		[m2]	
1	shops	800	
2	shops	1,816	
3	shops	1,200	
4	shops	122,535	
5	shops	100,000	
6	shops	200,000	
7	shops	70,000	
8	shops	60,000	
9	shops	60,000	
10	shops	76,822	
11	shops	1,750	
12	factory	800	
13	factory	2,400	
14	factory	18,250	
15	factory	20,000	
16	factory	Unknown	
17	factory	13,659	
18	restaurant		
19	restaurant	200	
20	restaurant	43,009	
21	hotel	3,474	
22	hotel	2,187	
23	hotel	5,200	
24	hotel	9,700	
25	hotel	2,587	
26	hotel	4,015	
27	hotel	96,000	
28	hotel	80,000	
29	hotel	54,485	
30	hotel	61,752	
31	hospital	201	
32	hospital	1,500	
33	hospital	2,500	
34	hospital	7,791	
35	hospital	19,000	
36	hospital	115,000	
37	office	5,000	
38	office	8,000	
39	office	3,206	
40	office	2,983	
41	office	31,693	
42	office	59,364	
43	office	47,572	
44	office	29,000	
45	office	18,395	
46	office	10,600	
47	office	31,140	
48	school	5,000	
49	school	12,000	
50	school	10,800	
51	school	33,726	

Result of Survey B

No.	Category	Question 1-6	
		Single choice	
		Construction Cost	
		1	2
		Unknown	Estimated Cost [Rp.]
1	shops	1	
2	shops	1	
3	shops		500,000,000
4	shops	1	
5	shops	1	
6	shops	1	
7	shops	1	
8	shops	1	
9	shops	1	
10	shops	1	
11	shops	1	
12	factory	1	
13	factory		150,000,000
14	factory	1	
15	factory	1	
16	factory	1	
17	factory	1	
18	restaurant		
19	restaurant	1	
20	restaurant	1	
21	hotel	1	
22	hotel	1	
23	hotel	1	
24	hotel		7,500,000,000
25	hotel	1	
26	hotel	1	
27	hotel	1	
28	hotel	1	
29	hotel	1	
30	hotel	1	
31	hospital	1	
32	hospital	1	
33	hospital		9,000,000,000
34	hospital	1	
35	hospital	1	
36	hospital	1	
37	office	1	
38	office	1	
39	office	1	
40	office	1	
41	office	1	
42	office	1	
43	office	1	
44	office	1	
45	office	1	
46	office	1	
47	office	1	
48	school	1	
49	school	1	
50	school		70,000,000,000
51	school	1	
Total		45	

Result of Survey B

No.	Category	Question 1-5						
		Single choice						
		Constructed Year						
		1	2	3	4	5	6	7
		Less than 5 years ago	Less than 10 years ago	Less than 20 years ago	Less than 30 years ago	Less than 40 years ago	Less than 50 years ago	More than 50 years ago
1	shops				1			
2	shops				1			
3	shops					1		
4	shops		1					
5	shops					1		
6	shops				1			
7	shops				1			
8	shops					1		
9	shops					1		
10	shops					1		
11	shops				1			
12	factory						1	
13	factory				1			
14	factory		1					
15	factory					1		
16	factory					1		
17	factory							1
18	restaurant							
19	restaurant					1		
20	restaurant		1					
21	hotel			1				
22	hotel				1			
23	hotel			1				
24	hotel			1				
25	hotel					1		
26	hotel				1			
27	hotel						1	
28	hotel					1		
29	hotel					1		
30	hotel					1		
31	hospital					1		
32	hospital				1			
33	hospital		1					
34	hospital					1		
35	hospital							1
36	hospital							1
37	office					1		
38	office					1		
39	office					1		
40	office			1				
41	office			1				
42	office					1		
43	office						1	
44	office					1		
45	office						1	
46	office					1		
47	office					1		
48	school		1					
49	school			1				
50	school			1				
51	school		1					
Total		0	7	7	17	14	2	3

Result of Survey B

No.	Category	Question 1-8				
		Single choice				
		Building ownership				
		1	2	3	4	5
		Our company	Rental	Central government	Local government	Others
1	shops	1				
2	shops	1				
3	shops	1				
4	shops	1				
5	shops	1				
6	shops	1				
7	shops	1				
8	shops	1				
9	shops	1				
10	shops	1				
11	shops				1	
12	factory	1				
13	factory	1				
14	factory				1	
15	factory					1
16	factory	1				
17	factory				1	
18	restaurant					
19	restaurant	1				
20	restaurant	1				
21	hotel	1				
22	hotel	1				
23	hotel	1				
24	hotel	1				
25	hotel	1				
26	hotel	1				
27	hotel	1				
28	hotel	1				
29	hotel					1
30	hotel					1
31	hospital	1				
32	hospital	1		1		
33	hospital				1	
34	hospital	1				
35	hospital		1			
36	hospital	1				
37	office	1				
38	office	1			1	
39	office	1				
40	office		1			
41	office		1			
42	office					1
43	office	1				
44	office					1
45	office					1
46	office					1
47	office					1
48	school	1				
49	school	1				
50	school		1			
51	school	1				
Total		29	5	0	0	16

Result of Survey B

No.	Category	Question 1-7				
		Single choice				
		Number of company in the building				
		1	2	3	4	5
	Only one company	Less than 5 companies	Less than 10 companies	Less than 20 companies	More than 20 companies	
1	shops	1				
2	shops	1				
3	shops	1				
4	shops					1
5	shops					1
6	shops					1
7	shops					1
8	shops					1
9	shops					1
10	shops					1
11	shops					1
12	factory	1				
13	factory	1				
14	factory	1				
15	factory	1				
16	factory	1				
17	factory	1				
18	restaurant					
19	restaurant	1				
20	restaurant					1
21	hotel	1				
22	hotel	1				
23	hotel		1			
24	hotel	1				
25	hotel	1				
26	hotel	1				
27	hotel	1				
28	hotel	1				
29	hotel					1
30	hotel					1
31	hospital	1				
32	hospital	1				
33	hospital	1				
34	hospital	1				
35	hospital		1			
36	hospital	1				
37	office	1				
38	office	1				
39	office	1				
40	office		1			
41	office		1			
42	office					1
43	office	1				
44	office					1
45	office					1
46	office					1
47	office					1
48	school	1				
49	school	1				
50	school		1			
51	school	1				
Total		29	5	0	0	16

Result of Survey B

No.	Category	Question 2-1				
		Multiple choice				
		Drinking water source				
		1	2	3	4	5
		1	2	3	4	5
		Tap water (PAM)	Purchase by the private water selling company	Private well	Shared well or tap water	Others
1	shops		1			
2	shops	1				
3	shops		1		1	
4	shops		1			
5	shops		1			
6	shops	1	1			
7	shops	1	1			
8	shops		1			
9	shops	1				
10	shops		1			
11	shops		1			
12	factory		1			
13	factory		1			
14	factory					1
15	factory	1	1			
16	factory		1			
17	factory	1	1			
18	restaurant					
19	restaurant			1		
20	restaurant			1		
21	hotel			1		
22	hotel			1		
23	hotel			1		
24	hotel			1		
25	hotel			1		
26	hotel			1		
27	hotel			1		
28	hotel			1		
29	hotel	1		1		
30	hotel			1		
31	hospital			1		
32	hospital			1		
33	hospital			1		
34	hospital			1		
35	hospital			1		
36	hospital			1		
37	office	1				
38	office	1				
39	office	1				
40	office	1				
41	office	1				
42	office	1				
43	office	1				
44	office	1				
45	office	1				
46	office	1				
47	office	1				
48	school			1		
49	school			1		
50	school			1		
51	school			1		
	Total	18	8	9	33	1

Result of Survey B

No.	Category	Question 1-9					
		Multiple choice					
		Type of Use					
		1	2	3	4	5	6
		1	2	3	4	5	6
		Office	Factory	Commercial business	Service business	Residential space	Others
1	shops	1	1				
2	shops	1	1				
3	shops		1				
4	shops			1			
5	shops	1		1	1	1	
6	shops			1	1		
7	shops			1	1		
8	shops	1		1	1		
9	shops			1	1		
10	shops			1	1		
11	shops			1			
12	factory			1			
13	factory			1			
14	factory						1
15	factory	1	1			1	
16	factory		1				
17	factory	1	1			1	
18	restaurant						
19	restaurant					1	
20	restaurant				1	1	
21	hotel					1	
22	hotel					1	
23	hotel					1	
24	hotel					1	
25	hotel					1	
26	hotel					1	
27	hotel					1	
28	hotel					1	
29	hotel	1				1	
30	hotel					1	
31	hospital					1	
32	hospital					1	
33	hospital					1	
34	hospital					1	
35	hospital					1	
36	hospital					1	
37	office	1					
38	office	1				1	
39	office	1				1	
40	office	1				1	
41	office	1					
42	office	1					
43	office	1					
44	office	1					
45	office	1					
46	office	1					
47	office	1					
48	school					1	
49	school					1	
50	school					1	
51	school					1	
	Total	18	8	9	33	1	1

Result of Survey B

No.	Category	Question 2-2-1	
		Free answer (only for the respondents who answer (3) in Question 2-2)	
		Depth of the well	
		Well 1 [m]	Well 2 [m]
1	shops	20	
2	shops	25	
3	shops	25	
4	shops	200	
5	shops	60	
6	shops	250	150
7	shops	80	
8	shops	80	
9	shops	120	
10	shops	100	
11	shops	24	24
12	factory		
13	factory	12	
14	factory	80	
15	factory	131	
16	factory		
17	factory		
18	restaurant		
19	restaurant		
20	restaurant		
21	hotel	25	
22	hotel	25	
23	hotel		
24	hotel	100	
25	hotel	80	
26	hotel	80	
27	hotel		
28	hotel		
29	hotel		
30	hotel	150	
31	hospital	34	
32	hospital		
33	hospital	40	
34	hospital	8	
35	hospital	35	
36	hospital		
37	office		
38	office		
39	office		
40	office	25	
41	office	60	
42	office	82	
43	office		
44	office	60	
45	office	200	
46	office	80	150
47	office	150	
48	school	60	
49	school	175	
50	school	150	
51	school	150	

Result of Survey B

No.	Category	Question 2-2						Note
		Multiple choice						
		Other water source						
		1	2	3	4	5	6	
		Tap water (PAM)	Purchase by the private water selling company	Private well	Shared well or tap water	Recycled water	Others	
1	shops			1				
2	shops	1		1				
3	shops	1		1				
4	shops	1		1		1		
5	shops	1		1				Well is almost not used, just for back up
6	shops	1				1		PAM: Well: Recycled water = 38% : 13% : 49%
7	shops	1		1		1		Wells are just used for back up. PAM: Well = 90% : 10%
8	shops	1		1		1		Well is almost not used, just for back up. Recycled system is not operated because the quality is not appropriate for use.
9	shops	1		1		1		Well is almost not used, just for back up. Recycled system is not operated because the recycled water quality is poor.
10	shops	1		1				Wells are just used for back up. PAM: Well = 80% : 20%
11	shops	1		1				Wells are frequently used. Only at some floors (3rd and 4th floors), PAM is used.
12	factory	1						
13	factory			1				
14	factory			1				
15	factory			1				
16	factory	1						
17	factory	1						
18	restaurant							
19	restaurant	1						
20	restaurant	1				1		
21	hotel	1		1				Wells are just used for back up. PAM: Well = 90% : 10%
22	hotel	1		1				PAM: Well = 50% : 50%
23	hotel	1						
24	hotel	1		1				
25	hotel	1		1				Wells are just used for back up. PAM: Well = 75% : 25%
26	hotel	1		1				
27	hotel	1				1		
28	hotel	1						
29	hotel	1				1		
30	hotel	1		1				Wells are just used for back up
31	hospital			1				
32	hospital	1						
33	hospital	1		1				
34	hospital	1		1				Wells just used for back up
35	hospital	1		1				
36	hospital	1						
37	office	1						
38	office	1						
39	office	1						
40	office	1		1				
41	office	1		1				Well is almost not used, just for back up
42	office	1		1				Wells are just used for back up. PAM: well = 90% : 10%
43	office	1				1		Recycled water is just used for gardening
44	office	1		1				Well is almost not used, just for back up
45	office	1		1				Well is almost not used, just for back up
46	office			1				
47	office	1		1				Well is almost not used, just for back up
48	school	1		1				Well has been not used since 2010, now it is just for back up
49	school	1		1				PAM: Well = 40% : 60%
50	school	1		1				
51	school	1		1				
Total		44	0	35	0	9		0

Result of Survey B

No.	Category	Question 2-3							
		Single choice							
		Number of toilet in the building							
		1	2	3	4	5	6	7	8
		1 place	2 places	3 places	4 places	5 places	less than 10 places	more than 10 places	Nothing
1	shops		1						
2	shops						1		
3	shops						1		
4	shops							1	
5	shops							1	
6	shops							1	
7	shops							1	
8	shops							1	
9	shops						1		
10	shops						1		
11	shops						1		
12	factory						1		
13	factory				1				
14	factory					1			
15	factory							1	
16	factory							1	
17	factory							1	
18	restaurant								
19	restaurant	1							
20	restaurant						1		
21	hotel							1	
22	hotel							1	
23	hotel							1	
24	hotel							1	
25	hotel							1	
26	hotel							1	
27	hotel							1	
28	hotel							1	
29	hotel							1	
30	hotel							1	
31	hospital				1				
32	hospital							1	
33	hospital							1	
34	hospital							1	
35	hospital							1	
36	hospital							1	
37	office				1				
38	office							1	
39	office							1	
40	office							1	
41	office							1	
42	office							1	
43	office							1	
44	office							1	
45	office							1	
46	office							1	
47	office							1	
48	school						1		
49	school							1	
50	school							1	
51	school							1	
Total		1	1	0	3	1	8	36	0

Result of Survey B

No.	Category	Question 2-2-2	
		Free answer (only for the respondents who answer (5) in Question 2-2)	
		Amount or ratio of use of recycled water L/day	%
1	shops		
2	shops		
3	shops		
4	shops		30
5	shops		
6	shops	120,000	
7	shops		10
8	shops		0
9	shops	< 10	
10	shops		
11	shops		
12	factory		
13	factory		
14	factory		
15	factory		
16	factory		
17	factory		
18	restaurant		
19	restaurant		
20	restaurant		35
21	hotel		
22	hotel		
23	hotel		
24	hotel		
25	hotel		
26	hotel		
27	hotel		40
28	hotel		
29	hotel		40
30	hotel		
31	hospital		
32	hospital		
33	hospital		
34	hospital		
35	hospital		
36	hospital		
37	office		
38	office		
39	office		
40	office		
41	office		
42	office		
43	office		5
44	office		
45	office		
46	office		
47	office		
48	school		
49	school		
50	school		
51	school		

Result of Survey B

No.	Category	Question 2-4							
		Single choice							
		Number of kitchen in the building							
		1	2	3	4	5	6	7	8
		1 place	2 places	3 places	4 places	5 places	less than 10 places	more than 10 places	Nothing
1	shops	1							
2	shops	1							
3	shops	1							
4	shops						1		
5	shops							1	
6	shops							1	
7	shops							1	
8	shops							1	
9	shops							1	
10	shops							1	
11	shops	1							
12	factory	1							
13	factory	1							
14	factory	1							
15	factory		1						
16	factory			1					
17	factory						1		
18	restaurant								
19	restaurant	1							
20	restaurant							1	
21	hotel	1							
22	hotel	1							
23	hotel	1							
24	hotel	1							
25	hotel	1							
26	hotel	1							
27	hotel						1		
28	hotel						1	1	
29	hotel							1	
30	hotel						1		
31	hospital	1							
32	hospital	1							
33	hospital						1		
34	hospital	1							
35	hospital			1					
36	hospital	1							
37	office	1							
38	office							1	
39	office				1				
40	office				1				
41	office							1	
42	office							1	
43	office							1	
44	office							1	
45	office						1		
46	office						1		
47	office							1	
48	school						1		
49	school						1		
50	school	1							
51	school	1							
	Total	21	1	2	2	1	8	15	0

Result of Survey B

No.	Category	Question 2-5							
		Single choice							
		Number of shower room in the building							
		1 1 place	2 2 places	3 3 places	4 4 places	5 5 places	6 less than 10 places	7 more than 10 places	8 Nothing
1	shops	1							
2	shops	1							
3	shops	1							
4	shops							1	
5	shops							1	
6	shops								1
7	shops		1						
8	shops								1
9	shops	1							
10	shops								1
11	shops						1		
12	factory								1
13	factory	1							
14	factory		1						
15	factory		1						
16	factory			1					
17	factory					1			
18	restaurant								
19	restaurant								1
20	restaurant	1							
21	hotel							1	
22	hotel							1	
23	hotel							1	
24	hotel							1	
25	hotel							1	
26	hotel							1	
27	hotel							1	
28	hotel							1	
29	hotel							1	
30	hotel							1	
31	hospital								1
32	hospital							1	
33	hospital				1				
34	hospital						1		
35	hospital							1	
36	hospital							1	
37	office		1						
38	office	1							
39	office					1			
40	office						1		
41	office				1				
42	office							1	
43	office	1							
44	office	1							
45	office							1	
46	office						1		
47	office		1						
48	school						1		
49	school								1
50	school								1
51	school	1							
	Total	10	5	2	1	2	5	17	8



Result of Survey B

No.	Category	Question 2-7	
		Free answer	
		Volume of water use in the building per day or month	
		1	2
		L/day	L/month
1	shops	1,600	
2	shops		28,000
3	shops	6,000	
4	shops	185,000	
5	shops	400,000	
6	shops	275,000	
7	shops		13,000,000
8	shops	800,000	
9	shops	125,000	
10	shops	80,000	
11	shops	unknown	
12	factory		128,000
13	factory	5,000	
14	factory	40,000	
15	factory	16,000	
16	factory	7,500	223,000
17	factory		6,500,000
18	restaurant		
19	restaurant	22,000	
20	restaurant	250,000	
21	hotel	60,000	
22	hotel	80,000	
23	hotel	36,000	
24	hotel	100,000	
25	hotel	24,200	
26	hotel		480,000
27	hotel	1,100,000	
28	hotel	750,000	
29	hotel	862,000	
30	hotel	1,200,000	
31	hospital	3,000	
32	hospital	30,000	
33	hospital	5,000	
34	hospital		600,000
35	hospital	450,000	
36	hospital	1,753,000	
37	office		120,000
38	office	20,000	
39	office	4,000	
40	office	15,000	
41	office		2,500,000
42	office	40,000	
43	office		5,600,000
44	office		4,400,000
45	office	65,000	
46	office	30,000	
47	office	200,000	
48	school	65,000	
49	school		1,343,000
50	school	60,000	
51	school	7,300	

Result of Survey B

No.	Category	Question 2-6							
		Single choice							
		Number of other space where people use water in the building							
		1	2	3	4	5	6	7	8
		1 place	2 places	3 places	4 places	5 places	less than 10 places	more than 10 places	Nothing
1	shops	1							
2	shops				1				
3	shops	1							
4	shops					1			
5	shops				1				
6	shops							1	
7	shops							1	
8	shops							1	
9	shops								1
10	shops	1							
11	shops		1						
12	factory								1
13	factory		1						
14	factory					1			
15	factory	1							
16	factory	1							
17	factory		1						
18	restaurant								
19	restaurant								1
20	restaurant							1	
21	hotel	1							
22	hotel				1				
23	hotel				1				
24	hotel		1						
25	hotel				1				
26	hotel		1						
27	hotel				1				
28	hotel							1	
29	hotel							1	
30	hotel					1			
31	hospital								1
32	hospital								1
33	hospital				1				
34	hospital				1				
35	hospital								1
36	hospital								1
37	office							1	
38	office					1			
39	office				1				
40	office					1			
41	office				1				
42	office								1
43	office		1						
44	office				1				
45	office							1	
46	office				1				
47	office					1			
48	school							1	
49	school		1						
50	school				1				
51	school		1						
Total		6	8	13	6	1	6	7	3

Result of Survey B

No.	Category	Question 3-1									
		Multiple choice (changed from Single choice)									
		Number of kitchen in the building									
		1	2	3	4	5	6	7	8	9	10
	Septic tank	Standard activated sludge method	Extended aeration process	Batch mode treatment process	Contact aeration process	Rotary disc method	Modified septic tank	Other treatment methods	No treatment facility	Sewerage	
1	shops							1			
2	shops							1			
3	shops			1							
4	shops			1							
5	shops			1							
6	shops			1							
7	shops			1							
8	shops			1							
9	shops			1							
10	shops			1							
11	shops	1									
12	factory						1				
13	factory			1							
14	factory							1			
15	factory							1			
16	factory							1			
17	factory	1					1				
18	restaurant										
19	restaurant			1							
20	restaurant							1			
21	hotel							1			
22	hotel			1							
23	hotel					1					
24	hotel			1							
25	hotel			1							
26	hotel			1							
27	hotel			1							
28	hotel			1						1	
29	hotel			1							
30	hotel									1	
31	hospital							1			
32	hospital							1			
33	hospital			1							
34	hospital			1							
35	hospital							1			
36	hospital			1							
37	office							1			
38	office			1							
39	office			1							
40	office			1							
41	office			1							
42	office									1	
43	office							1			
44	office									1	
45	office									1	
46	office			1							
47	office									1	
48	school					1					
49	school						1				
50	school						1				
51	school						1				
	Total	2	0	25	0	2	3	3	11	0	6

Result of Survey B

No.	Category	Question 3-2		Note
		Free answer (except for the respondents who answer (9) in Question 3-1)		
		Installation year and month of the treatment facility		
		1	2	
		Month	Year	
1	shops		2004	
2	shops	February	2008	
3	shops		2007	
4	shops	January	2011	
5	shops		1980	
6	shops		1988	
7	shops		1990	
8	shops		1980	
9	shops		1974	
10	shops		1987	
11	shops		1984	
12	factory		2004	
13	factory		1990	
14	factory	November	2010	
15	factory		1973	
16	factory	August	2006	
17	factory		1953 & 2010	Office 1 & 2 was built in 1953 and office 3 was built in 2010
18	restaurant			
19	restaurant		1989	
20	restaurant		2004	
21	hotel		1997	
22	hotel		2002	
23	hotel	May	1993	
24	hotel		1992	
25	hotel		1998	
26	hotel		2004	
27	hotel		1985	
28	hotel		1985	STP in main+garden tower was built in 1985, and lagoon tower connect to PD PAL JAYA in 2005
29	hotel		1994	
30	hotel		1997	
31	hospital		2009	
32	hospital		2006	
33	hospital		2007	
34	hospital		2002	
35	hospital		2005	
36	hospital		1991-1997	
37	office	November	2010	
38	office		1996	
39	office	December	1996	
40	office	August	1996	
41	office		1997	
42	office		1991	
43	office		1992	
44	office		1991	
45	office		1991	
46	office		1990	
47	office		1991	
48	school		2004	
49	school		2008	
50	school		2004	
51	school	November	2003	

Result of Survey B

No.	Category	Question 3-4				
		Single choice (except for the respondents who answer (9) in Question 3-1)				
		Installation place of the treatment facility				
		1	2	3	4	5
		Inside the building	Under the building	Place within 10m	Place more than 10m	Unknown
1	shops		1			
2	shops			1		
3	shops			1		
4	shops			1		
5	shops			1		
6	shops				1	
7	shops			1		
8	shops				1	
9	shops			1		
10	shops				1	
11	shops				1	
12	factory			1		
13	factory			1		
14	factory	1				
15	factory				1	
16	factory				1	
17	factory				1	
18	restaurant					
19	restaurant			1		
20	restaurant				1	
21	hotel			1		
22	hotel			1		
23	hotel	1				
24	hotel			1		
25	hotel			1		
26	hotel			1		
27	hotel				1	
28	hotel				1	
29	hotel			1		
30	hotel					1
31	hospital			1		
32	hospital	1				
33	hospital			1		
34	hospital	1				
35	hospital		1			
36	hospital				1	
37	office				1	
38	office			1		
39	office		1			
40	office		1			
41	office			1		
42	office					1
43	office		1			
44	office					1
45	office					1
46	office				1	
47	office					1
48	school			1		
49	school				1	
50	school	1				
51	school		1			
	Total	6	11	19	9	5

Result of Survey B

No.	Category	Question 3-3	
		Free answer (except for the respondents who answer (9) in Question 3-1)	
		Installation cost for the treatment facility	
		1	2
		Amoun [Rp.]	Unknown
1	shops	5,000,000	
2	shops		1
3	shops	19,500,000	
4	shops	850,000,000	
5	shops		1
6	shops		1
7	shops		1
8	shops		1
9	shops	400,000,000	
10	shops		1
11	shops		1
12	factory		1
13	factory		1
14	factory		1
15	factory		1
16	factory		1
17	factory		1
18	restaurant		
19	restaurant		1
20	restaurant		1
21	hotel		1
22	hotel		1
23	hotel		1
24	hotel	70,000,000	
25	hotel	150,000,000	
26	hotel		1
27	hotel		1
28	hotel		1
29	hotel	350,000,000	
30	hotel		1
31	hospital	17,426,000	
32	hospital	200,000,000	
33	hospital		1
34	hospital		1
35	hospital		1
36	hospital		1
37	office		1
38	office		1
39	office	150,000,000	
40	office		1
41	office		1
42	office		1
43	office		1
44	office		1
45	office		1
46	office		1
47	office		1
48	school		1
49	school		1
50	school		1
51	school		1

Result of Survey B

No.	Category	Question 3-6	
		Free answer (except for the respondents who answer (9) in Question 3-1)	
		Treatment capacity of treatment facility	[L/day]
1	shops		2,000
2	shops		24,000
3	shops		17,500
4	shops		250,000
5	shops		300,000
6	shops		325,000
7	shops		250,000
8	shops		500,000
9	shops		90,000
10	shops		75,000
11	shops	unknown	
12	factory	unknown	
13	factory		3,000
14	factory		250,000
15	factory		14,400
16	factory		100,000
17	factory		2,000
18	restaurant		
19	restaurant		30,000
20	restaurant		230,000
21	hotel		50,000
22	hotel		70,000
23	hotel		32,000
24	hotel		80,000
25	hotel		19,000
26	hotel		16,000
27	hotel		800,000
28	hotel		400,000
29	hotel		800,000
30	hotel	unknown	
31	hospital		2,000
32	hospital		20,000
33	hospital		10,000
34	hospital		25,000
35	hospital		370,000
36	hospital		790,960
37	office		2,000
38	office		20,000
39	office		20,000
40	office		15,000
41	office		80,000
42	office	unknown	
43	office	unknown	
44	office	unknown	
45	office	unknown	
46	office		40,000
47	office	unknown	
48	school		60,000
49	school		60,000
50	school		60,000
51	school		50,000

Result of Survey B

No.	Category	Question 3-5						
		Single choice (except for the respondents who answer (9) in Question 3-1)						
		Operation situation of the treatment facility						
		1	2	3	4	5		
	Appropriate operation everyday	Appropriate operation except for once a week	Appropriate operation except for three times a week	Inappropriate operation	Free answer for the respondents who answer (3) or (4) in this Question	What are the reasons of the inappropriate operation?	Unknown	
1	shops				1	blower	broken	
2	shops	1						
3	shops	1						
4	shops	1						
5	shops	1						
6	shops	1						
7	shops	1						
8	shops					1	aeration tank	not enough blower capacity for treatment in aeration tank (capacity of STP does not comparable with the incoming wastewater)
9	shops					1	blower	not enough power supply for aeration process (insufficient maintenance, since 2 months ago O&M by themselves)
10	shops					1	effluent pump	the pump just broken, so water in aeration tank overflowed outside
11	shops	1						
12	factory	1						
13	factory	1						
14	factory	1						
15	factory	1						
16	factory	1						
17	factory	1						
18	restaurant							
19	restaurant	1						
20	restaurant	1						
21	hotel	1						
22	hotel	1						
23	hotel	1						
24	hotel	1						
25	hotel	1						
26	hotel	1						
27	hotel	1						
28	hotel	1						
29	hotel	1						
30	hotel							1
31	hospital	1						
32	hospital	1						
33	hospital	1						
34	hospital	1						
35	hospital	1						
36	hospital	1						
37	office	1						
38	office	1						
39	office	1						
40	office	1						
41	office	1						
42	office							1
43	office					1	blower	diffuser had been already broken, so they didn't operate the blower
44	office							1
45	office							1
46	office	1						
47	office							1
48	school					1	blower	the blowers don't have enough power supply for aeration process, so some bacterial media flow to effluent tank
49	school	1						
50	school	1						
51	school	1						
Total		39	0	0	6			5

Result of Survey B

No.	Category	Question 3-8			
		Free answer (except for the respondents who answer (9) in Question 3-1)			
		Treated water quality			
		1	2	3	5
		COD (Cr)	BOD (20°C, 5days)	SS	Ammonia
		[mg/L]	[mg/L]	[mg/L]	[mg/L]
1	shops	unknown	unknown	unknown	unknown
2	shops	unknown	unknown	unknown	unknown
3	shops	unknown	unknown	unknown	unknown
4	shops	unknown	unknown	unknown	unknown
5	shops	45	15	16	1
6	shops	unknown	unknown	unknown	unknown
7	shops	78	36	10	18
8	shops	24	5	6	0
9	shops	90	27	39	44
10	shops	54	20	12	75
11	shops	unknown	unknown	unknown	unknown
12	factory	70	27	15	unknown
13	factory	unknown	unknown	unknown	unknown
14	factory	unknown	unknown	unknown	unknown
15	factory	unknown	unknown	unknown	unknown
16	factory	unknown	unknown	unknown	unknown
17	factory	unknown	unknown	unknown	unknown
18	restaurant				
19	restaurant	40	7	2	0
20	restaurant	unknown	unknown	unknown	unknown
21	hotel	unknown	unknown	unknown	unknown
22	hotel	15	8	11	14
23	hotel	unknown	unknown	unknown	unknown
24	hotel	85	25	60	25
25	hotel	53	17	11	0
26	hotel	25	11	6	0
27	hotel	26	8	7	1
28	hotel	51	12	5	1
29	hotel	46.33	16.85	45	17
30	hotel	unknown	unknown	unknown	unknown
31	hospital	11	47	19	13
32	hospital	unknown	unknown	unknown	unknown
33	hospital	unknown	unknown	unknown	unknown
34	hospital	unknown	unknown	unknown	unknown
35	hospital	unknown	unknown	unknown	unknown
36	hospital	78	28	10	14
37	office	27	11.1	5	23
38	office	unknown	unknown	unknown	unknown
39	office	unknown	unknown	unknown	unknown
40	office	unknown	unknown	unknown	unknown
41	office	30	13	12	5
42	office	unknown	unknown	unknown	unknown
43	office	unknown	unknown	unknown	unknown
44	office	unknown	unknown	unknown	unknown
45	office	unknown	unknown	unknown	unknown
46	office	23	9	11	3
47	office	unknown	unknown	unknown	unknown
48	school	14	8	5	39
49	school	unknown	unknown	unknown	unknown
50	school	unknown	unknown	unknown	unknown
51	school	unknown	unknown	unknown	unknown

Result of Survey B

No.	Category	Question 3-7	
		Free answer (except for the respondents who answer (9) in Question 3-1)	
		Achieved maximum treatment capacity	
		[L/day]	
1	shops		3,000
2	shops		28,000
3	shops		36,000
4	shops		350,000
5	shops		600,000
6	shops		410,000
7	shops		300,000
8	shops		700,000
9	shops		420,000
10	shops		100,000
11	shops	unknown	
12	factory		12,000
13	factory		5,000
14	factory		300,000
15	factory		20,000
16	factory		250,000
17	factory		3,080
18	restaurant		
19	restaurant		40,000
20	restaurant		250,000
21	hotel		206,400
22	hotel		80,000
23	hotel		40,000
24	hotel		90,000
25	hotel		40,000
26	hotel		40,000
27	hotel		1,500,000
28	hotel		600,000
29	hotel		925,000
30	hotel	unknown	
31	hospital		3,000
32	hospital		30,000
33	hospital		20,000
34	hospital		35,000
35	hospital		500,000
36	hospital		1,091,000
37	office		3,400
38	office		40,000
39	office		40,000
40	office		21,000
41	office		90,000
42	office	unknown	
43	office	unknown	
44	office	unknown	
45	office	unknown	
46	office		60,000
47	office	unknown	
48	school		70,000
49	school		70,000
50	school		80,000
51	school		150,000

Result of Survey B

No.	Category	Question 3-10	
		Free answer (except for the respondents who answer (9) in Question 3-1)	
		Cost of operation and maintenance for treatment facility [Rp./month]	
1	shops	unknown	
2	shops		4,500,000
3	shops		250,000
4	shops		6,300,000
5	shops		1,000,000
6	shops	unknown	
7	shops		20,000,000
8	shops		10,000,000
9	shops		1,200,000
10	shops		500,000
11	shops	unknown	
12	factory	unknown	
13	factory		750,000
14	factory		15,000,000
15	factory		10,000,000
16	factory	unknown	
17	factory	unknown	
18	restaurant		
19	restaurant		7,000,000
20	restaurant		670,000
21	hotel		110,000
22	hotel		600,000
23	hotel	unknown	
24	hotel		600,000
25	hotel		1,700,000
26	hotel		600,000
27	hotel		2,400,000
28	hotel		26,000,000
29	hotel		25,000,000
30	hotel		49,000,000
31	hospital		150,000
32	hospital		340,000
33	hospital	unknown	
34	hospital	unknown	
35	hospital		12,000,000
36	hospital		12,500,000
37	office	unknown	
38	office		880,000
39	office		500,000
40	office		1,430,000
41	office		2,000,000
42	office		30,000,000
43	office		4,166,667
44	office		13,000,000
45	office		8,086,500
46	office		6,900,000
47	office		16,905,300
48	school		1,083,333
49	school	unknown	
50	school		2,000,000
51	school		500,000

Result of Survey B

No.	Category	Question 3-9				Note
		Single choice (except for the respondents who answer (9) in Question 3-1)				
		Method of operation and maintenance of treatment facility				
1	2	3	4			
		By outsourcing with private company	By the company themselves	No operation and maintenance	Unknown	
1	shops		1			
2	shops		1			
3	shops		1			
4	shops	1				PT.PUSAKA ALAM SEJATI
5	shops		1			
6	shops		1			
7	shops		1			
8	shops	1				PT. Cefahira Teknik Persada
9	shops		1			
10	shops		1			
11	shops	1				CV Mulia Sejahtera
12	factory			1		
13	factory		1			
14	factory		1			
15	factory		1			
16	factory		1			
17	factory			1		
18	restaurant					
19	restaurant	1				PT. Citra Mutia Mandiri
20	restaurant		1			
21	hotel		1			
22	hotel	1				Personal employee
23	hotel		1			
24	hotel	1				Personal employee
25	hotel	1				Personal employee
26	hotel	1				Personal employee
27	hotel		1			
28	hotel	1				PT. Fransari Tirta
29	hotel		1			
30	hotel		1			
31	hospital		1			
32	hospital		1			
33	hospital		1			
34	hospital		1			
35	hospital	1				PT. Indo Service Utama
36	hospital	1				PT. Juki Tirta Buana
37	office	1				PT. PAL Jayabumi Utama
38	office	1				PT.TIRTA SARANA ALAMINDO
39	office		1			
40	office	1				PT. Frestovo Mechaeki Indonesia
41	office		1			
42	office		1			
43	office		1			
44	office		1			
45	office		1			
46	office	1				PT. Verosani Indah Perkasa
47	office		1			
48	school		1			
49	school		1			
50	school		1			
51	school		1			
Total		15	33	2	0	

Result of Survey B

No.	Category	Question 3-12				
		Single choice (except for the respondents who answer (9) in Question 3-1)				
		Method of sludge removal				
		1	2	3	4	5
			Call a public agency (such as DKI Jakarta, PD PAL JAYA, etc.)	Unnecessary or Unknown		
1	shops					1
2	shops					1
3	shops					1
4	shops	1				
5	shops	1				
6	shops	1				
7	shops					1
8	shops	1				
9	shops	1				
10	shops		1			
11	shops					1
12	shops					1
13	shops					1
14	shops					1
15	shops					1
16	shops	1				
17	shops					1
18	shops					1
19	shops	1				
20	shops					1
21	shops	1				
22	shops					1
23	shops	1				
24	shops					1
25	shops	1				
26	shops	1				
27	shops	1				
28	shops					1
29	shops	1				
30	shops					1
31	shops					1
32	shops					1
33	shops					1
34	shops	1				
35	shops					1
36	shops					1
37	shops					1
38	shops					1
39	shops	1				
40	shops					1
41	shops	1				
42	shops					1
43	shops					1
44	shops					1
45	shops					1
46	shops					1
47	shops					1
48	shops					1
49	shops					1
50	shops					1
51	shops					1
Total		21	3	2	19	5

Result of Survey B

No.	Category	Question 3-11						
		Single choice (except for the respondents who answer (9) in Question 3-1)						
		Frequency of sludge removal						
		1	2	3	4	5	6	7
	More than 1 time in a year	1 time in a year	1 time in two years	1 time in three years	1 time in more than four years	Never remove the sludge	Unknown	
1	shops		1					
2	shops					1		
3	shops					1		
4	shops		1					
5	shops		1					
6	shops		1					
7	shops		1					
8	shops	1						
9	shops	1						
10	shops	1						
11	shops	1						
12	shops		1					
13	shops					1		
14	shops		1					
15	shops					1		
16	shops					1		
17	shops		1					
18	shops							
19	shops					1		
20	shops	1						
21	shops	1						
22	shops					1		
23	shops					1		
24	shops		1					
25	shops		1					
26	shops		1					
27	shops		1					
28	shops					1		
29	shops		1					
30	shops					1		
31	shops					1		
32	shops					1		
33	shops					1		
34	shops			1				
35	shops		1					
36	shops					1		
37	shops					1		
38	shops					1		
39	shops	1						
40	shops						1	
41	shops	1						
42	shops					1		
43	shops					1		
44	shops					1		
45	shops					1		
46	shops		1					
47	shops					1		
48	shops					1		
49	shops				1			
50	shops		1					
51	shops		1					
Total		8	16	1	1	1	22	



Result of Survey B

No.	Category	Question 3-14								
		Single choice								
		Final destination of wastewater								
		1	2	3	4	5	6	7	8	9
		Septic tank	Pit latrine	Open channel	Sewage pipe	Pond	Water basin	Modified septic tank	Others	Unknown
1	shops			1						
2	shops			1						
3	shops			1						
4	shops			1						
5	shops			1						
6	shops			1						
7	shops			1						
8	shops			1						
9	shops			1						
10	shops			1						
11	shops	1								
12	factory			1				1		
13	factory								1	
14	factory			1						
15	factory								1	
16	factory	1								1
17	factory	1								1
18	restaurant									
19	restaurant				1					
20	restaurant		1							
21	hotel				1					
22	hotel				1					
23	hotel				1					
24	hotel				1					
25	hotel				1					
26	hotel				1					
27	hotel				1					
28	hotel				1					
29	hotel	1								
30	hotel				1					
31	hospital				1					
32	hospital				1					
33	hospital				1					
34	hospital				1					
35	hospital				1					
36	hospital				1					
37	office				1					
38	office				1					
39	office				1					
40	office				1					
41	office				1					
42	office				1					
43	office				1					
44	office				1					
45	office				1					
46	office				1					
47	office				1					
48	school				1					
49	school				1					
50	school				1					
51	school				1					
Total		1	0	33	6	1	0	1	10	1

Result of Survey B

No.	Category	Question 3-13				
		Single choice (except for the respondents who answer (9) in Question 3-1)				
		Do you know the importance to remove the sewage sludge and how do you think about it?				
		1	2	3	4	5
		I know and I think it is necessary	I do not know, but I think it is necessary.	I know, but I do not think it is necessary	I do not know, and I do not think it is necessary.	I have no idea
1	shops	1				
2	shops	1				
3	shops	1				
4	shops	1				
5	shops	1				
6	shops	1				
7	shops	1				
8	shops	1				
9	shops	1				
10	shops	1				
11	shops	1				
12	factory	1				
13	factory	1				
14	factory	1				
15	factory		1			
16	factory	1				
17	factory	1				
18	restaurant					
19	restaurant				1	
20	restaurant	1				
21	hotel	1				
22	hotel			1		
23	hotel	1				
24	hotel	1				
25	hotel	1				
26	hotel	1				
27	hotel	1				
28	hotel			1		
29	hotel	1				
30	hotel			1		
31	hospital	1				
32	hospital	1				
33	hospital	1				
34	hospital	1				
35	hospital	1				
36	hospital	1				
37	office				1	
38	office	1				
39	office	1				
40	office	1				
41	office	1				
42	office				1	
43	office	1				
44	office				1	
45	office				1	
46	office	1				
47	office				1	
48	school	1				
49	school	1				
50	school	1				
51	school	1				
Total		40	1	9	0	0

Result of Survey B

No.	Category	Question 3-16				
		Single choice				
		Report to BPLHD				
		1	2	3	4	5
		2 times a year. We have records.	2 times a year. We do not have records.	1 time a year. We have records.	1 time a year. We do not have records.	Never
1	shops		1			
2	shops		1			
3	shops		1			
4	shops		1			
5	shops		1			
6	shops		1			
7	shops		1			
8	shops		1			
9	shops		1			
10	shops			1		
11	shops					1
12	factory		1			
13	factory		1			
14	factory		1			
15	factory		1			
16	factory		1			
17	factory		1			
18	restaurant					
19	restaurant		1			
20	restaurant		1			
21	hotel		1			
22	hotel		1			
23	hotel			1		
24	hotel		1			
25	hotel		1			
26	hotel		1			
27	hotel		1			
28	hotel		1			
29	hotel		1			
30	hotel					1
31	hospital		1			
32	hospital		1			
33	hospital		1			
34	hospital		1			
35	hospital		1			
36	hospital		1			
37	office		1			
38	office		1			
39	office		1			
40	office		1			
41	office		1			
42	office		1			
43	office					1
44	office					1
45	office					1
46	office		1			
47	office		1			
48	school		1			
49	school		1			
50	school		1			
51	school		1			
Total			41	2	0	0

Result of Survey B

No.	Category	Question 3-15		
		Single choice		
		Have you done anything after the regulation of wastewater in 2005? If you did, what kind of action did you do?		
		1	2	
		Yes	Action	No
1	shops			1
2	shops			1
3	shops		1 expansion of the treatment capacity	
4	shops		1	
5	shops			1
6	shops		1 construction of recycled system (2008)	
7	shops		1 construction of recycled system (2009)	
8	shops		1 improvement of the treatment plant and construction of the recycled system	
9	shops		1 start of opreate recycled system (2007)	
10	shops			1
11	shops			1
12	factory			1
13	factory			1
14	factory			1
15	factory			1
16	factory		1 improvement of the proces of the treatment plant	
17	factory			1
18	restaurant			
19	restaurant			1
20	restaurant		1 replacement of the treatment plant	
21	hotel			1
22	hotel			1
23	hotel			1
24	hotel		1 repair of the process of the treatment plant	
25	hotel		1 construction of inspection chamber	
26	hotel			1
27	hotel		1 construction of recycled water system	
28	hotel		1 construction of recycled system (on progress)	
29	hotel		1 construction of recycled water system	
30	hotel			1
31	hospital			1
32	hospital		1 construction of a new treatment plant	
33	hospital			1
34	hospital			1
35	hospital			1
36	hospital			1
37	office			1
38	office			1
39	office			1
40	office			1
41	office			1
42	office		1 construction of inspection chamber between building and sewage pipe main hole from PD PAL JAYA	
43	office			1
44	office			1
45	office			1
46	office			1
47	office			1
48	school			1
49	school		1 change of the treatment process from standard activated sludge into ratary disc method	
50	school			1
51	school			1
Total			16	34

Result of Survey B

No.	Category	Question 3-19		
		Single choice		
		Do you know about PD PAL JAYA?		
		1	2	3
		Yes, I know the name and its work.	I know just a name.	I do not know.
1	shops			1
2	shops	1		
3	shops			1
4	shops	1		
5	shops	1		
6	shops		1	
7	shops	1		
8	shops			1
9	shops		1	
10	shops			1
11	shops			1
12	factory	1		
13	factory	1		
14	factory			1
15	factory	1		
16	factory		1	
17	factory			1
18	factory	1		
19	restaurant			
20	restaurant	1		
21	restaurant		1	
22	hotel	1		
23	hotel		1	
24	hotel	1		
25	hotel			1
26	hotel		1	
27	hotel	1		
28	hotel	1		
29	hotel			1
30	hotel	1		
31	hospital			1
32	hospital	1		
33	hospital			1
34	hospital			1
35	hospital			1
36	hospital	1		
37	office	1		
38	office			1
39	office	1		
40	office	1		
41	office	1		
42	office			1
43	office			1
44	office		1	
45	office	1		
46	office			1
47	office	1		
48	school			1
49	school			1
50	school	1		
51	school		1	
Total		21	13	16

Result of Survey B

No.	Category	Question 3-18
		Free answer
		Problem about wastewater treatment?
1	shops	
2	shops	
3	shops	
4	shops	
5	shops	low pH (pH5,5) and high concentration of ammonia (as of Nov 2010)
6	shops	high level BOD and COD
7	shops	high concentration of ammonia
8	shops	
9	shops	so many solid wastes flow to influent tank
10	shops	broken pump (too much solid wastes flow into this pump)
11	shops	
12	factory	
13	factory	
14	factory	
15	factory	
16	factory	high conductivity from cooling tower
17	factory	financing and land use preparation in particular for treatment plant and its operation
18	restaurant	
19	restaurant	
20	restaurant	
21	hotel	high concentration of methylene blue
22	hotel	high concentration of methylene blue and ammonia
23	hotel	license process and its cost
24	hotel	
25	hotel	high concentration of ammonia
26	hotel	
27	hotel	high concentration of ammonia
28	hotel	
29	hotel	clogged pipe (because so many wastes flow to the plant)
30	hotel	
31	hospital	high concentration of ammonia
32	hospital	uneasy operation (such as over haul)
33	hospital	
34	hospital	
35	hospital	
36	hospital	high pH and ammonia level
37	office	broken pump and high concentration of ammonia
38	office	
39	office	
40	office	
41	office	high concentration of ammonia or chlorine
42	office	
43	office	
44	office	
45	office	
46	office	high concentration of ammonia
47	office	
48	school	high concentration of ammonia and broken blower
49	school	high concentration of ammonia
50	school	different results from the laboratory tests with the private sector
51	school	

Result of Survey B

No.	Category	Question 3-17	
		Single choice	
		Experience of inspection by	
		1	2
		Yes	No
1	shops		1
2	shops		1
3	shops		1
4	shops		1
5	shops	1	
6	shops	1	
7	shops	1	
8	shops	1	
9	shops	1	
10	shops		1
11	shops		1
12	factory	1	
13	factory	1	
14	factory		1
15	factory	1	
16	factory	1	
17	factory		1
18	restaurant		
19	restaurant	1	
20	restaurant		1
21	hotel	1	
22	hotel	1	
23	hotel		1
24	hotel	1	
25	hotel	1	
26	hotel	1	
27	hotel	1	
28	hotel	1	
29	hotel		1
30	hotel	1	
31	hospital		1
32	hospital	1	
33	hospital		1
34	hospital		1
35	hospital		1
36	hospital	1	
37	office	1	
38	office		1
39	office	1	
40	office	1	
41	office	1	
42	office		1
43	office		1
44	office		1
45	office		1
46	office	1	
47	office		1
48	school	1	
49	school		1
50	school	1	
51	school		1
Total		27	23

Result of Survey B

No.	Category	Question 3-20				
		Single choice				
		If sewage pipes are install in your area, Are you willing to connect the wastewater to sewage				
		1	2	3	4	5
		Yes	No	if sewage charge is cheaper than current cost of O&M, I will connect it.	I can not determined now.	Unknown
1	shops				1	
2	shops				1	
3	shops				1	
4	shops					1
5	shops				1	
6	shops					1
7	shops				1	
8	shops					1
9	shops				1	
10	shops				1	
11	shops	1				
12	factory	1				
13	factory				1	
14	factory				1	
15	factory				1	
16	factory				1	
17	factory	1				
18	restaurant					
19	restaurant					1
20	restaurant				1	
21	hotel					1
22	hotel				1	
23	hotel				1	
24	hotel					1
25	hotel					1
26	hotel	1				
27	hotel				1	
28	hotel		1			
29	hotel		1			
30	hotel					1
31	hospital	1				
32	hospital				1	
33	hospital				1	
34	hospital				1	
35	hospital				1	
36	hospital				1	
37	office				1	
38	office				1	
39	office				1	
40	office					1
41	office				1	
42	office					1
43	office					1
44	office					1
45	office					1
46	office			1		
47	office					1
48	school	1				
49	school				1	
50	school					1
51	school				1	
	Total	6	2		27	10
						5

Result of Survey B

No.	Category	Question 4-1																			
		Single choice																			
		Business type																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		Agriculture, Forestry, Fishing and Hunting	Mining	Utilities	Construction	Manufacturing	Wholesale Trade	Retail Trade	Transportation and Warehousing	Information	Finance and Insurance	Real Estate and Rental and Leasing	Professional, Scientific, and Technical Services	Management of Companies and Enterprises	Administrative and Support and Waste Management and Remediation Services	Education Service	Health Care and Social Assistance	Arts, Entertainment, and Recreation	Accommodation and Food Services	Other Services (except Public Administration)	Public Administration
1	shops																				1
2	shops																				1
3	shops																				1
4	shops												1								
5	shops											1									
6	shops											1									
7	shops											1									
8	shops											1									
9	shops											1									
10	shops											1									
11	shops								1												
12	factory	1																			
13	factory																				1
14	factory																				1
15	factory						1														
16	factory						1														
17	factory																				1
18	restaurant																				
19	restaurant																				1
20	restaurant											1									
21	hotel																				1
22	hotel																				1
23	hotel																				1
24	hotel																				1
25	hotel																				1
26	hotel																				1
27	hotel																				1
28	hotel																				1
29	hotel											1									
30	hotel																				1
31	hospital																				1
32	hospital																				1
33	hospital																				1
34	hospital																				1
35	hospital																				1
36	hospital																				1
37	office																				1
38	office																				1
39	office										1										
40	office																				1
41	office										1										
42	office											1									
43	office																				1
44	office											1									
45	office											1									
46	office											1									
47	office											1									
48	school																				1
49	school																				1
50	school																				1
51	school																				1
	Total	1	0	0	0	2	0	1	0	0	2	14	0	0	0	4	7	0	10	8	1

Result of Survey B

No.	Category	Question 4-3						
		Single choice						
		Year of the business commencement						
		1	2	3	4	5	6	7
		Less than 5 years ago	Less than 10 years ago	Less than 20 years ago	Less than 30 years ago	Less than 40 years ago	Less than 50 years ago	More than 50 years ago
1	shops					1		
2	shops					1		
3	shops						1	
4	shops		1					
5	shops						1	
6	shops					1		
7	shops					1		
8	shops					1		
9	shops						1	
10	shops						1	
11	shops					1		
12	factory							1
13	factory				1			
14	factory				1			
15	factory						1	
16	factory						1	
17	factory					1		
18	restaurant							
19	restaurant						1	
20	restaurant				1			
21	hotel				1			
22	hotel					1		
23	hotel					1		
24	hotel					1		
25	hotel						1	
26	hotel					1		
27	hotel						1	
28	hotel						1	
29	hotel					1		
30	hotel						1	
31	hospital						1	
32	hospital				1			
33	hospital				1			
34	hospital					1		
35	hospital							1
36	hospital							1
37	office				1			
38	office						1	
39	office							1
40	office					1		
41	office					1		
42	office						1	
43	office							1
44	office						1	
45	office							1
46	office					1		
47	office					1		
48	school				1			
49	school						1	
50	school					1		
51	school					1		
	Total	1	2	5	8	6	2	2

Result of Survey B

No.	Category	Question 4-2					
		Single choice					
		Number of workers					
		1	2	3	4	5	6
		Less than 10 persons	Less than 20 persons	Less than 40 persons	Less than 80 persons	Less than 100 persons	More than 100 persons
1	shops		1				
2	shops			1			
3	shops				1		
4	shops				1		
5	shops						1
6	shops						1
7	shops						1
8	shops						1
9	shops						1
10	shops						1
11	shops		1				
12	factory	1					
13	factory			1			
14	factory			1			
15	factory						1
16	factory						1
17	factory						1
18	restaurant						
19	restaurant				1		
20	restaurant						1
21	hotel				1		
22	hotel				1		
23	hotel				1		
24	hotel					1	
25	hotel						1
26	hotel						1
27	hotel						1
28	hotel						1
29	hotel					1	
30	hotel						1
31	hospital			1			
32	hospital				1		
33	hospital				1		
34	hospital						1
35	hospital						1
36	hospital						1
37	office			1			
38	office						1
39	office						1
40	office					1	
41	office						1
42	office						1
43	office						1
44	office						1
45	office						1
46	office					1	
47	office					1	
48	school					1	
49	school						1
50	school						1
51	school						1
	Total	1	2	5	8	6	28

Result of Survey B

No.	Category	Question 4-6					
		Single choice					
		Age of the respondent					
		1	2	3	4	5	6
		Less than 20 years old	21-30 years old	31-40 years old	41-50 years old	51-60 years old	More than 61 years old
1	shops			1			
2	shops						1
3	shops						1
4	shops					1	
5	shops					1	
6	shops				1		
7	shops					1	
8	shops		1				
9	shops			1			
10	shops				1		
11	shops					1	
12	shops					1	
13	shops						1
14	shops					1	
15	shops					1	
16	shops			1			
17	shops				1		
18	shops						1
19	shops						1
20	shops						1
21	shops						1
22	shops						1
23	shops						1
24	shops						1
25	shops						1
26	shops						1
27	shops						1
28	shops						1
29	shops						1
30	shops						1
31	shops						1
32	shops						1
33	shops						1
34	shops						1
35	shops						1
36	shops						1
37	shops						1
38	shops						1
39	shops						1
40	shops						1
41	shops						1
42	shops						1
43	shops						1
44	shops						1
45	shops						1
46	shops						1
47	shops						1
48	shops						1
49	shops						1
50	shops						1
51	shops						1
Total		0	3	13	22	9	3

Result of Survey B

No.	Category	Question 4-5	
		Single choice	
		Gender of the respondent	
		1	3
		Male	Female
1	shops	1	
2	shops		1
3	shops	1	
4	shops	1	
5	shops	1	
6	shops	1	
7	shops	1	
8	shops	1	
9	shops	1	
10	shops	1	
11	shops	1	
12	shops	1	
13	shops	1	
14	shops	1	
15	shops	1	
16	shops	1	
17	shops		1
18	shops		1
19	shops	1	
20	shops	1	
21	shops		1
22	shops	1	
23	shops	1	
24	shops	1	
25	shops	1	
26	shops	1	
27	shops	1	
28	shops	1	
29	shops	1	
30	shops	1	
31	shops		1
32	shops	1	
33	shops	1	
34	shops	1	
35	shops	1	
36	shops	1	
37	shops	1	
38	shops	1	
39	shops	1	
40	shops	1	
41	shops	1	
42	shops	1	
43	shops	1	
44	shops	1	
45	shops	1	
46	shops	1	
47	shops	1	
48	shops	1	
49	shops	1	
50	shops	1	
51	shops	1	
Total		46	4

Result of Survey B

No.	Category	Question 4-4
		Free answer
		Title of the respondent
1	shops	quality control supervisor
2	shops	quality control manager
3	shops	managing director
4	shops	chief engineer
5	shops	chief engineer
6	shops	supervisor maintenance & engineering
7	shops	chief engineer
8	shops	office manager
9	shops	chief engineer
10	shops	assistant supervisor (mechanical and engineering)
11	shops	head of tenants and maintenance division
12	factory	general affairs staff
13	factory	owner of the company
14	factory	head office manager
15	factory	supervisor engineer
16	factory	supervisor maintenance & engineering
17	factory	head of environmental division
18	restaurant	
19	restaurant	maintenance supervisor
20	restaurant	chief engineer
21	hotel	operational manager
22	hotel	chief engineer
23	hotel	room production manager
24	hotel	chief engineer
25	hotel	co-supervisor engineer
26	hotel	chief engineer
27	hotel	chief engineer
28	hotel	chief engineer
29	hotel	general manager
30	hotel	chief engineer
31	hospital	branch manager
32	hospital	environmental health (hygiene and sanitation) staff
33	hospital	sanitation staff
34	hospital	engineer supervisor
35	hospital	analist
36	hospital	head of environmental health division
37	office	head of maintenance division
38	office	branch manager
39	office	staff
40	office	general staff
41	office	engineer coordinator
42	office	chief engineer
43	office	head of maintenance division
44	office	chief engineer
45	office	maintenance manager
46	office	general manager
47	office	general affairs staff
48	school	maintenance staff
49	school	engineering staff
50	school	manager of accounting
51	school	maintenance coordinator

**PART-H ENVIRONMENTAL EDUCATION AND  
PUBLIC CAMPAIGN ACTIVITIES FOR  
WASTEWATER SECTOR**



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SP/R : Supporting Report

M/R : Main Report

## PART-H ENVIRONMENTAL EDUCATION AND PUBLIC CAMPAIGN ACTIVITIES FOR WASTEWATER SECTOR

### H1 Accelerated Development of Residential Sanitation Program (PPSP)

Table S/R-H1-1 Review of Environmental Education and Campaign in Indonesia

No.	Implementer	Name of Environmental Education/Campaign	Place	Content (purpose)	Implementation Year, Month	Budget
1	Directorate of Environmental Sanitation Development	Refreshment of Sanitation Campaign and Education	Jakarta	<ul style="list-style-type: none"> <li>▪ Develop an understanding about the situation and condition of environmental sanitation in their respective regions</li> <li>▪ Enhance understanding of the importance of management of solid waste, wastewater, and drainage to realize a clean and helthy environment (housing area)</li> <li>▪ Motivate woman to get involved and participate in Environmental Sanitation (Housing area) especially in the matter of Campaign and Education of Environmental Sanitation</li> </ul>	Apr 30th, 2009	
2	Public Works Agency of Bengkulu	Socialization for Increasing the Women Participation to Realize a Clean and Healthy Environment (Housing Area)	Bengkulu	<ul style="list-style-type: none"> <li>▪ Introduced the 3R program and improve the understanding of sanitation issues, especially regarding the solid waste management. It is realized through the competition of making poster and writing about the Environmental Sanitation to Elementary and Middle School students</li> </ul>	Aug 1st, 2009	
3	Working unit of Environmental Sanitation of DKI Jakarta Province	Jamboree Sanitation (Sanitation for a Better Life)	Jakarta	<ul style="list-style-type: none"> <li>▪ Socialization of 3R program are realized by : <ul style="list-style-type: none"> <li>▪ Held the waste sorting and threw it into the bank trash (garbage can) in accordance with its type</li> <li>▪ form a POCIL (a Little Police of Environment) to monitor the solid waste management in each elementary school</li> <li>▪ Held an activity that called "Recycling Mania"</li> </ul> </li> </ul>	Dec 3-6, 2008	
4	Working unit of Environmental Sanitation of Bali Province	3R Inter-School Competitions	Gianyar - Bali	<ul style="list-style-type: none"> <li>▪ Held a recycling practices</li> <li>▪ Held a creativity competition of 3R campaign on stagea</li> <li>▪ Held a competition by making recycled products</li> </ul>	2008	
5	Working unit of Environmental Sanitation of East Java Province	Highlights of the 3R Campaign to Elementary Shool Students Among the City of Surabaya	Surabaya - East Java	<ul style="list-style-type: none"> <li>▪ Held a recycling practices</li> <li>▪ Held a creativity competition of 3R campaign on stagea</li> <li>▪ Held a competition by making recycled products</li> </ul>	Oct 21st, 2008	

**Table S/R-H1-1 Review of Environmental Education and Campaign in Indonesia**

No.	Implementer	Name of Environmental Education/Campaign	Place	Content (purpose)	Implementation Year, Month	Budget
6	Ministry of Public Work	Sanitation Preserve Water and Environmental	Jakarta	This Education and Public Campaign are realized by : <ul style="list-style-type: none"> <li>▪ Held a peaceful demonstration carrying banner that say about "sanitation preserve water and environmental" within the framework of world water day</li> <li>▪ Held an exhibition on sanitation, for example by demonstrating the model of SANIMAS</li> <li>▪ Held a competition by sorting the waste based on its type</li> <li>▪ The ministry officials (Min. of Public Works and Min. of Health) together with children hold a motion to wash hands using soap (the program called CTPS "Cuci Tangan Pake Sabun"</li> </ul>	March 22nd, 2008	
7	(not mentioned, maybe Public Works sub-Agency in cooperation with Education Agency at Regency/City level)	Selection the Sanitation representatives at Regency/City level	Regency/City	1) To select the candidate of Sanitation Representative/ambassador in level of Junior high School. 2) To help children to have understanding on sanitation.	determination of winner: May 2010	
8	(not mentioned, maybe Public works sub-agency in cooperation with related agencies and mass media)	Campaign on Environmental Sanitation to the woman organization (it is recommended the campaign is in form of Workshop)	not mentioned	1) To emphasized community care on the field of Environmental Sanitation and its impact; 2) To empower woman to have more role and participation in environmental sanitation	1 effective day, time is not mentioned exactly when	
9	(not clearly mentioned, maybe Public works Agency at provincial level in cooperation with education agency)	3R competition inter-Primary Schools (inter-provincial level and intra-provincial level)	Primary School	(not mentioned the purpose, but it is written that before socialization, it should be done the small survey on sanitation behavior and take a picture of existing condition in that school)	1) for socialization at least June 2010; 2) the determination of the winner at least September 2010	
10	(not clearly mentioned, maybe Public Works Agency in cooperation	Public campaign	Mass media	(not mentioned the purpose, but is is written that it should consider the event, timing, and monitoring to the response of the audience)	not mentioned	

**Table S/R-H1-1 Review of Environmental Education and Campaign in Indonesia**

No.	Implementer	Name of Environmental Education/Campaign	Place	Content (purpose)	Implementation Year, Month	Budget
	with media institution or providers, which will broadcast the campaign material)					

Source: JICA expert team

**Table S/R-H1-2 Review of Guideline on Environmental Education and Campaign year 2010 (Implementation Phase)**

No.	Implementer	Name of Environmental Education/Campaign	Place	Content (purpose)	Implementation Year, Month	Budget
1	(not mentioned, maybe Public Works sub-Agency in cooperation with Education Agency at Regency/City level)	Selection the Sanitation representatives at Regency/City level	Regency/City	1) To select the candidate of Sanitation Representative/ambassador in level of Junior high School. 2) To help children to have understanding on sanitation.	determination of winner: May 2010	
2	(not mentioned, maybe Public works sub-agency in cooperation with related agencies and mass media)	Campaign on Environmental Sanitation to the woman organization (it is recommended the campaign is in form of Workshop)	not mentioned	1) To emphasized community care on the field of Environmental Sanitation and its impact; 2) To empower woman to have more role and participation in environmental sanitation	1 effective day, time is not mentioned exactly when	
3	(not clearly mentioned, maybe Public works Agency at provincial level in cooperation with education agency)	3R competition inter-Primary Schools (inter-provincial level and intra-provincial level)	Primary School	(not mentioned the purpose, but it is written that before socialization, it should be done the small survey on sanitation behavior and take a picture of existing condition in that school)	1) for socialization at least June 2010; 2) the determination of the winner at least September 2010	
4	(not clearly mentioned, maybe Public Works Agency in cooperation with media institution or providers, which will broadcast the campaign material)	Public campaign	Mass media	(not mentioned the purpose, but is is written that it should consider the event, timing, and monitoring to the response of the audience)	not mentioned	

Source: JICA expert team



**Table S/R-H1-3 Working Plan of Accelerated Development of Residential Sanitation's Program**

No	Activities	Time																								Charge and Participants				
		July				August				Sept				Oct				Nov				Dec								
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV					
<b>III</b>	<b>Preparation of EHRA's study</b>																													
1	1st Working Group Meeting: Establishment of EHRA Team, determine the sampling criteria and enumerator criteria																													Working group, informant, facilitator, and KMW 2's expert.
2	EHRA Team Meeting: Clustering the Kecamatan and send the letter to the Head of Kecamatan to cluster their region																													EHRA Team/ working group and expert
3	Head of Kecamatan and Kelurahan clustering their region																													Head of Kecamatan and working group/EHRA team
4	Meeting of 2nd working group and EHRA team: recapitulation the Kecamatan and Kelurahan cluster																													Working group, EHRA team and expert
<b>IV</b>	<b>EHRA Survey</b>																													
1	EHRA team training : Kecamatan coordinator and field supervisor																													Working group and expert, KMW 2, facilitator
2	EHRA Team, Coordinator and Supervisor Meeting: set the target of survey area: Kelurahan, RT and respondent																													EHRA Team/ working group and expert, and facilitator
3	Enumerator training in 2 days (teory and field training)																													EHRA Team and expert, KMW 2 and facilitator
4	EHRA survey: data collection of respondents from enumerator																													EHRA Team and expert, and facilitator
5	Data entry and analysis data training (each of training is held in 2 days)																													EHRA Team and expert, KMW 2
6	Data entry and analysis data from survey result																													EHRA Team and expert, and facilitator
8	Report writing of EHRA study																													EHRA Team and expert, KWM 2
9	Meeting of 3rd working group and EHRA team: disscusion of EHRA report																													Working group, EHRA team, expert, facilitator

**Table S/R-H1-3 Working Plan of Accelerated Development of Residential Sanitation's Program**

No	Activities	Time																								Charge and Participants				
		July				August				Sept				Oct				Nov				Dec								
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV					
10	Public consultation: interim result of EHRA study by Steering team, working unit area device and community																													Working group, EHRA team, expert, KWM 2, facilitator, PMU, Technical PIU, Institutional PIU, Empowerment PIU, and stake holder
<b>V</b>	<b>Analysis of Secondary Data and Review of Mapping Result and Rapid Assessment and Draft of Sanitation "White Book"</b>																													
1	Institutional																													Working group, facilitator, KMW 2
2	Finance																													Working group, facilitator, KMW 2
3	Communication and Media analysis																													Working group, facilitator, KMW 2
4	Community empowerment and gender and poverty condiseration																													Working group, facilitator, KMW 2
5	Review of Mapping result and rapid assessment of sanitation situation																													Working group, facilitator, KMW 2
6	Review of EHRA study																													Working group, facilitator, KMW 2
<b>VI</b>	<b>Preparation of Sanitation "White Book"</b>																													
1	Writing the Santitation "white book"																													Working group, facilitator, KMW 2
2	Final Draft of Santitation "white book"																													Working group, facilitator, KMW 2
3	Finalization of Santitation "white book"																													Working group, facilitator, KMW 2
4	Conslutation to steering tim of sanitation work team																													Working group, facilitator, KMW 2
5	Public consultaion of Santitation "white book"																													Working group, facilitator, KMW 2
6	Completion and finalization of Santitation "white book"																													Working group, facilitator, KMW 2





**PART-I      CAPACITY BUILDING FOR  
COUNTERPART ORGANIZATIONS**

# **PART-I      CAPACITY      BUILDING      FOR      COUNTERPART                  ORGANIZATIONS**

## **I3      Training for GIS Database Development**

Training Text for GIS and CAD is follow.

***Training Text for Basic GIS Analysis Course (English)***

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# 1 Introduction

## 1.1 Purpose

Geographical Information Systems (GIS) are used to display, manipulate and analyze spatial (map) data. Spatial data are data that contain a reference to a place (in the case of this course, a place on earth).

Attendee shall discuss about application of this tool such as followings.

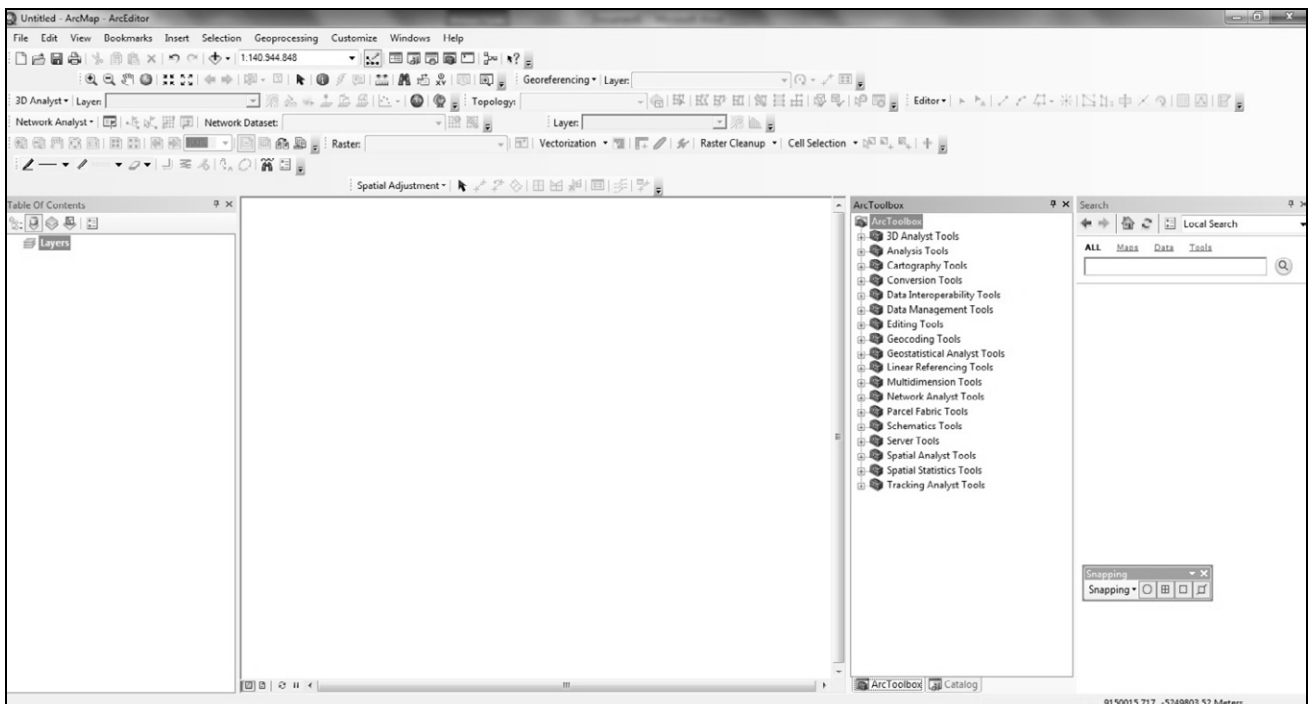
- Data Collection Including Field Work
- Application for Own Field

## 2 ArcGIS

ArcGIS has four separate applications — ArcMap, ArcCatalog, ArcToolbox, ArcScene and ArcGlobe. Only ArcMap will be used in this section; ArcCatalog, ArcScene and ArcToolbox will be introduced later.

### 2.1 ArcMap

ArcMap is used to display map (spatial) data. It is also used to edit, query and analyze map data. To start ArcMap select the menu item **Start | Programs | GIS | ArcGIS | ArcMap** ArcMap will show a welcome screen. Click **OK**, and ArcMap will display an empty map as below:

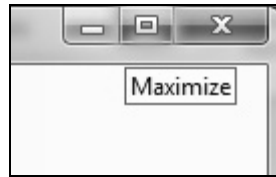


The following sections goes through adding data to a map, navigating around the map, and finally colouring and styling these.

## 2.2 Adding spatial data to ArcMap

Data added to a map in ArcMap are referred to as **Layers**. The steps below run through adding several layers to ArcMap.

Enlarge the ArcMap window by clicking the maximize icon in the top right corner:



To add a data source:


Click the **Add Data** icon  on the button bar,

Or

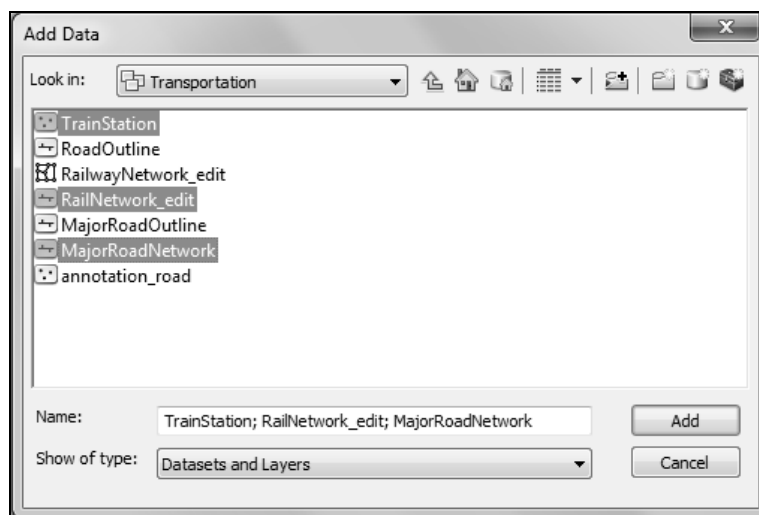
Choose **File | Add Data** from the menu bar. The **Add Data** dialog box will appear.

This session uses samples of the Topographic map 1:5 000 scale data from DKI Jakarta. The required data files are stored in the folder **Local Drive:/Data/GISDatabase/**.

To access this data we first have to connect to the folder containing the data:

1. Click on the **Connect To Folder** icon , navigate to **Local Drive:/Data/** and click **OK**.
2. Click on the Folder **GISDatabase/BaseMap2010/**
3. Double-click on **Transportation**. A list of data layers will be displayed.

Select all the data layers by clicking once on each in the list in turn, whilst holding down the **Ctrl** or **Shift** key:

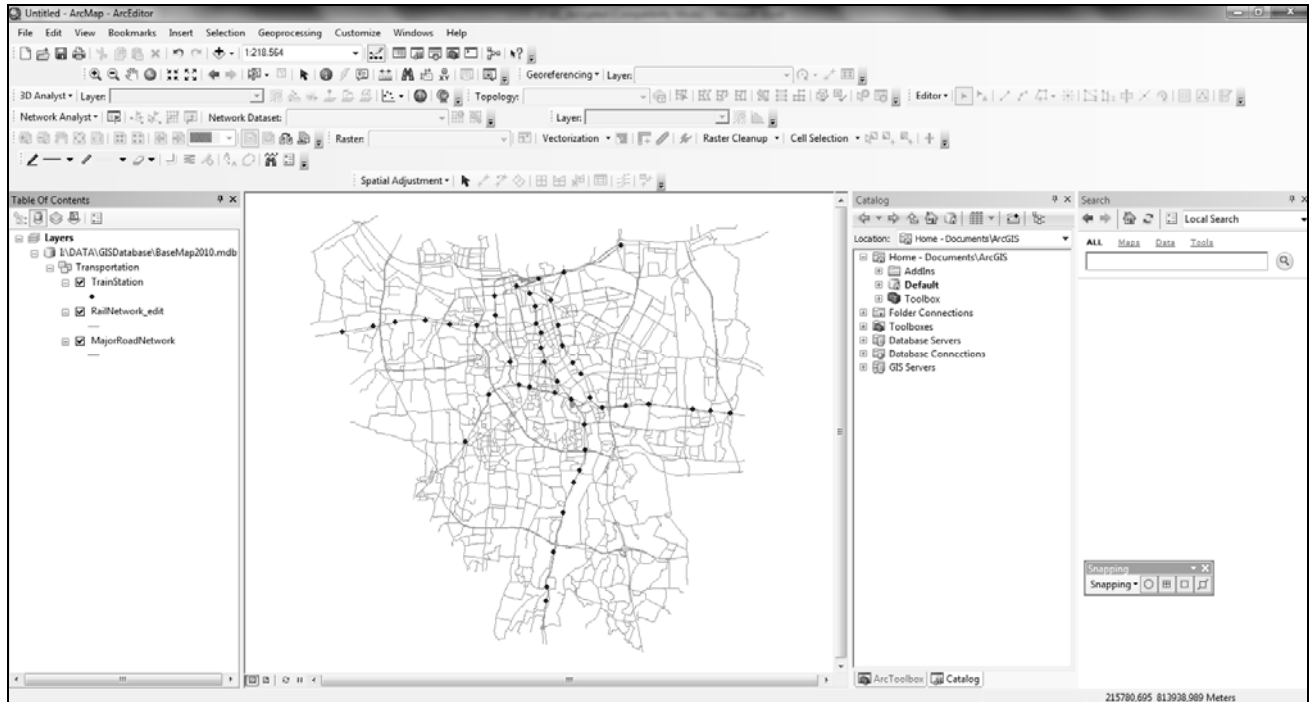


1. Once all required data files are highlighted click on **Add**
2. Ignore the message saying 'One or more layers is missing spatial reference information', and click **OK**.

Repeat same procedure for **Administration** and Select **AdministrationArea**.

## 2.3 Displaying spatial data in ArcMap

Each layer has an entry in the Table of Contents (TOC) displayed on the left-hand side of the window. There is a tick box alongside each layer entry which is used to turn the display of the layer on or off.



These datasets display quite quickly on the screen, but if you need to stop a screen re-draw, for example with large datasets, press the **ESC** key to cancel the re-draw.

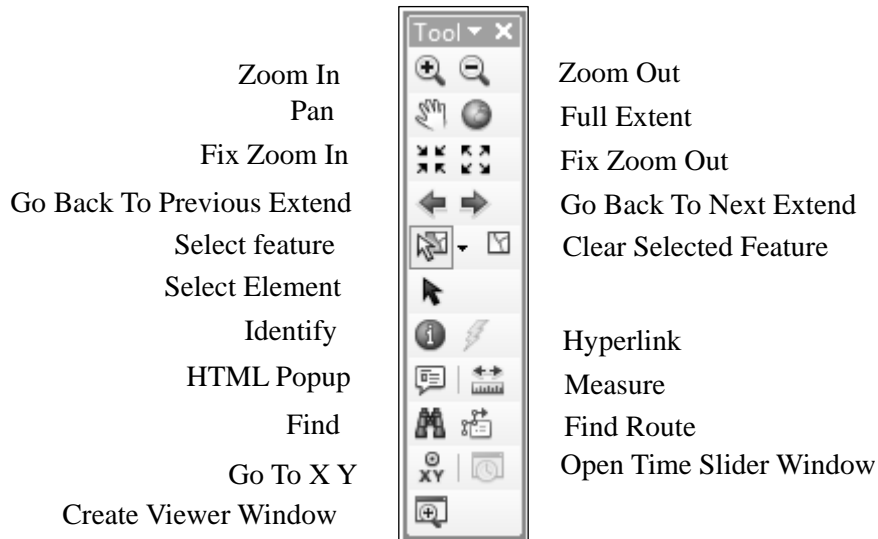
The position of a layer in the TOC determines the drawing order. ArcMap automatically orders these entries so that polygon layers (e.g. AdministrationArea) are at the bottom of the TOC, with line layers above so that they are not obscured by polygons. Point layers would also display above polygons for the same reason.

It is possible to change the drawing order of layers. This will be covered later.

Types of data used so far are known as vector data. Vector data can be composed of point, line or polygon features and are commonly used for data that needs to display quickly, and for when a lot of control is required for setting feature colors and styles. Vector files sizes are also quite small.

## 2.4 ArcMap navigation tools

ArcMap has a range of navigation tools that are located on the Tools floating toolbar displayed to the right of the ArcMap window:



Place the mouse cursor over each of these buttons in turn to get a brief description of its purpose (shown in the bar at the bottom left of the ArcMap window). Try using some of these tools.

Notice as you move the cursor around the ArcMap window that the cursor position is displayed at the bottom on the ArcMap window:

247466,494 818602,394 Meters

This is the real-world position of the feature on which the cursor is hovering over. The coordinates (in meters) shown for this Basemap data are the same as those that would be read off an paper map of the area.

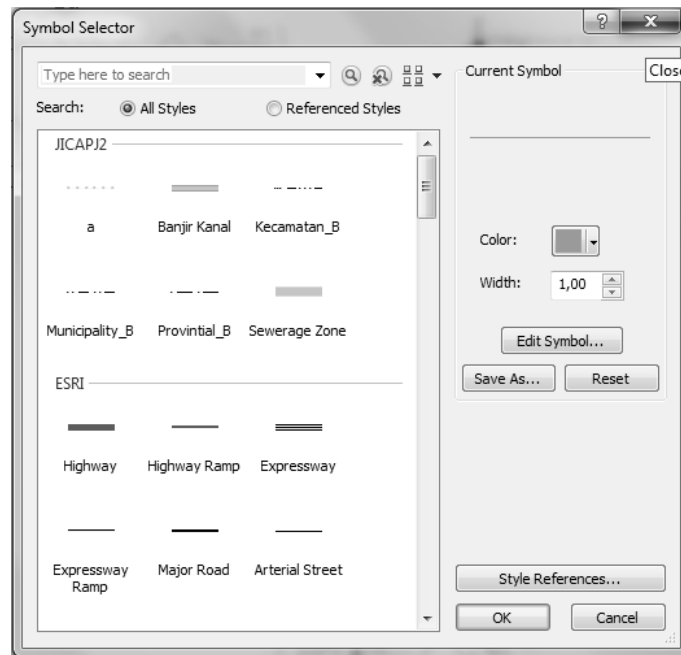
## 2.5 Coloring and styling layers

ArcMap automatically assigns a random colour and style to each layer. These are rarely suitable, but can easily be changed using the **Symbol Selector**.

To change the display color and style of a layer:



1. In the **TOC** click on the symbol you want to modify (e.g. **MajorRoadNetwork** the symbol at the top of entry). The **Symbol Selector** dialog box appears:



2. Change the **Color:** and **Width:** to distinguish **motorways** from other layers.
3. Click **OK** when finished. The map will re-draw to reflect any changes made.

Now would be a good time to change the drawing order of the layers so that **motorways** are displayed above all other roads.

1. Click and hold the left mouse button on the **MajorRoadNetwork** TOC entry the layer will be highlighted.
2. Move the mouse up the TOC — a thick black line will be displayed where the layer is to be inserted — and release the mouse button when the black line is at the required position, i.e. above all other layers.

## 2.6 Labelling a layer

To display labels for a layer:

1. In the TOC right-click the layer you want to label and select **Properties** (do this for **a\_roads**).
2. Click the **Labels** tab.
3. From **Label Field:** select the field to label with (**NU**). Note: NU is the name of the attribute field containing road numbers.
4. Click **OK**.

5. In the TOC right-click the **a\_roads** layer and select **Label Features**. Zoom into the map to view the labels.

## 2.7 Saving an ArcMap document

Display settings that have been defined during the current ArcMap session will be lost once ArcMap is exited. They can, however, be saved for future use by storing them as an ArcMap **map document**. At this stage it would be sensible to create a folder in which to keep this map document, and all other files used during the course.

1. Create a new folder called **giscourse** on your **J:** drive — use **Windows Explorer** or **My Computer** to do this.
2. In ArcMap choose **File | Save**, give the map document a name (e.g. **practical1.mxd**), and save it on your **J:** drive in the **giscourse** folder.

Next time you use ArcMap choose **File | Open** to retrieve your saved ArcMap map document.

Note: An ArcMap map document only contains display settings — it does not include the actual data. Only references to data are stored, so if all the data referenced in the project is on the T: drive, next time the project is opened it will fetch the data from the T: drive again. If you need to back-up, or send a map document to a colleague, both the map document and associated data must be included.

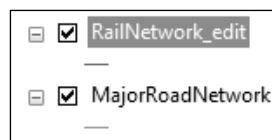
## 3 Attribute data and spatial querying

### 3.1 Accessing attribute data in ArcMap

Individual features on a map have associated information held in tabular format. These are known as attribute data.

There are two ways to access attribute data in ArcMap — using the identify tool, or by displaying the whole table for a layer.

1. First, select the **urban** layer in the Table of Contents by clicking on it with the left mouse button (the layer name will highlight):

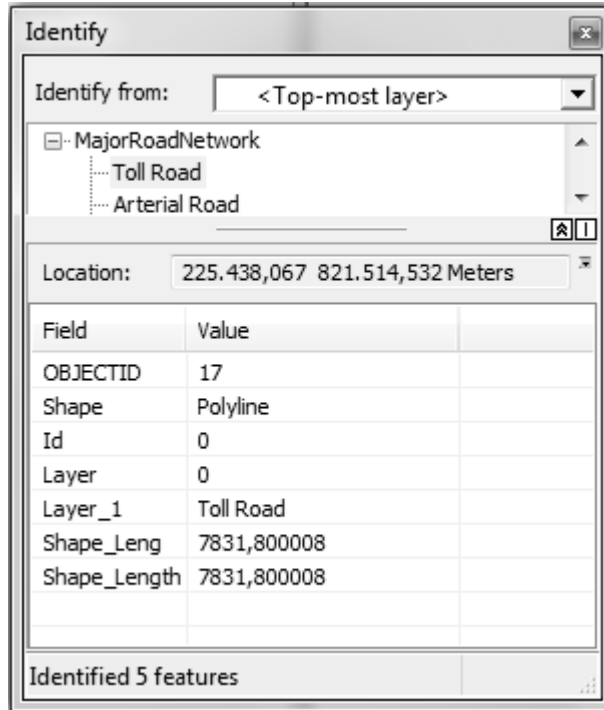


### 3.1.1 Using the Identify tool



Identify

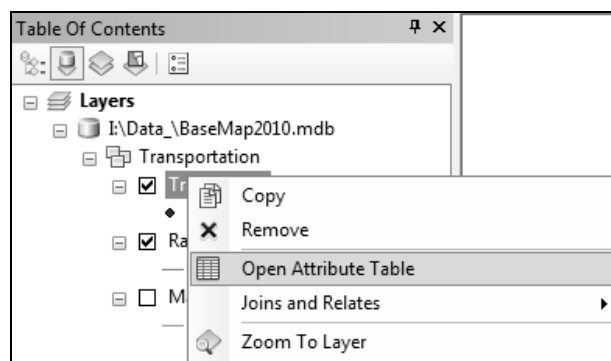
1. Click on the **Identify** button on the Tools floating toolbar, then on a feature on the map within the highlighted layer (i.e. urban). Attribute data on the layer will appear in the **Identify Results**



2. Do the same for the **a\_roads** layer and look at the field column — the **NU** value entry contains the road name (these were used earlier for labelling roads).

### 3.1.2 Displaying a complete table

The complete attribute table for a layer can be accessed by right-clicking on the TOC entry for the layer and selecting **Open Attribute Table** from the menu. Do this for the **a\_roads** layer:



Close the table when finished.

## 3.2 Querying attribute data

### 3.2.1 Using Select By Attributes

An attribute table can be queried (i.e. search for records) using the **Select By Attributes** menu.

1. Choose Selection | Select By Attributes from the menu bar. The Select By Attributes dialog box appears.

For example, choose to select **MajorRoadNetwork** that are named **'Junderal Sudirman'** by entering the field to search in **"RoadName"**, and **'Junderal Sudirman'** as the text to search for.

To do this, in the Select By Attributes dialog box that appears:

2. Check that **Layer:** is set to **MajorRoadNetwork**.
3. In the **Fields:** list on the left of the dialog box click **"RoadName"**, then double-click **'RoadName'** to paste it into the select box at the bottom.
4. Click the = icon, click **Get Unique Values** below the **'Unique values'** box on the right then double-click **'Junderal Sudirman'** from the resultant list.

When finished the dialog box should be filled out as below.

5. Click the **Apply** button and then **Close**.



All **MajorRoadNetwork** containing **'Junderal Sudirman'** in the **RoadName** field will now

be highlighted in light blue on the map.

1. To zoom to the selected features on the map select the menu **Selection | Zoom to Selected Features**.
2. Open the attribute table (right-click on **MajorRoadNetwork** in the TOC and select **Open Attribute Table**).

All the associated records are also highlighted in the table.

1. To view only the selected records in the list, press the **Selected** button.
2. To switch the Table selection to all records that do not have **MajorRoadNetwork = 'Junderal Sudirman'** click **ALL**, then the **Options** button and **Switch Selection** from the menu.
3. Close the table.

### 3.2.2 Using Find



Find can be used as an alternative to Select By Attributes. Find searches all attribute data and returns a list of matches.

#### Find

1. Press the **Find** button on the Tools toolbar, and enter **Sudirman** in the **Find:** box.
2. Press **Find**.

All occurrences of Sudirman will be displayed in a box at the bottom of the dialog box. Right-click on one of these rows to **Flash feature**, **Zoom to feature**, etc. You may need to zoom out to the extent of the map (use the **Full Extent** button on the **Tools** toolbar) to see the features flash.

Close the Find dialog box when finished and choose the menu **Selection | Clear Selected Features**.

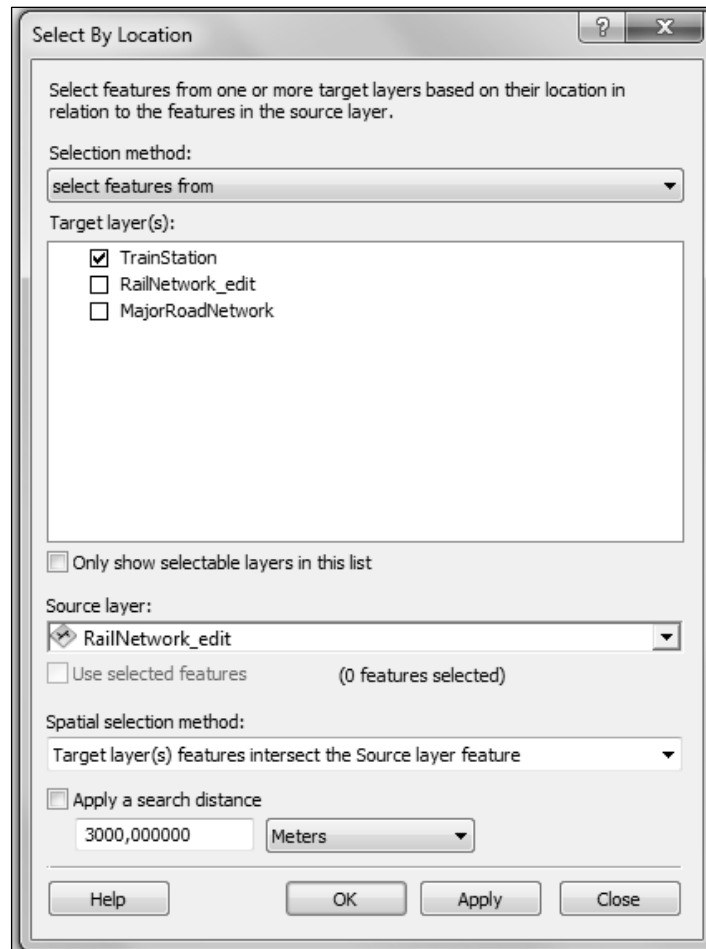
### 3.3 Performing a spatial query

One of the important features in a GIS is the ability to carry out spatial queries, i.e. queries on the relative position of features. This differentiates GIS from a pure mapping application.

The **Select By Location** menu choice allows us to carry out a spatial data search. For example, we may want to view all urban areas that have a motorway running through them:

1. Choose the menu **Selection | Select By Location**.
2. Make sure **Select features from** is chosen in the first box.
3. Tick **AdministrativeArea** in the second box.
4. Select **intersect** from the third box.

## 5. Select



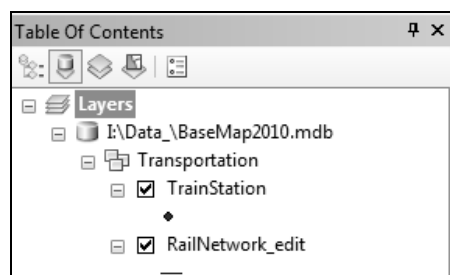
MajorRoadNetwork from the fourth box:

6. Finally, click Apply and then Close.
7. Selected urban areas will be shown in light blue on the map.
8. To zoom to the selected features, choose the menu Selection | Zoom To Selected Features.

## 4 Data Frames

As well as overlaying data in a map, we can create multiple Data Frames to display data from different geographical areas or to group related datasets together.

The default Data Frame is called **Layers**. It is this Data Frame we have used so far:




1. To add a new Data Frame, select the menu **Insert | Data Frame**. The active Data Frame is shown in bold in the TOC.
2. To make a Data Frame active right-mouse click the **Data Frame** name in the TOC and select the menu item **Activate**.
3. To change the name of a Data Frame right-mouse click the Data Frame name, select **Properties** and change the **Name:** field. Rename New Data Frame to **Codepoint Data**.

The layer to show in this new Data Frame will be added in the next section.

## 5 ArcCatalog — managing data

ArcCatalog is another ArcGIS application and is used for accessing and managing data. Specifically, it can be used to move, rename and copy datasets, and preview geographic and attribute data. It is particularly useful for backing up data.

ArcCatalog is used here to view and copy a sample layer that will be used to demonstrate ArcGIS concepts and functionality in this, and following sections.

1. Open ArcCatalog by selecting Start | Programs | GIS | ArcGIS | ArcCatalog
2. Click on the connection Local Drive:/Data/GISDatabase/ on the panel on the left of the ArcCatalog window (You may have to create a Data Connection by clicking on the Connect to Folder icon ,).
3. Click the plus icon beside LocalDrive:/Data/GISDatabase/ and double-click PopulationSewerageZone.xlsx on the left screen and highlight Sheet1\$.
4. Click the Preview tab to display a preview of Sheet1\$. The data are population of kelurahan in Jakarta City. Change Preview: at the bottom of the screen to Table to display the associated attribute data.

Use ArcCatalog to create **WellPoint.shp** to your **LocalDrive:/Data/GISDatabase** folder:

1. Right-click **GISDatabase folder** in the pane on the left and select **new Shapefile....**
2. Name shapefile by entering **WellPoint** in the name field and press **OK**.

Navigate to **J:/giscourse/**, right-click in the pane on the right (make sure the **Contents** tab is selected) and select **Paste**. **Codepoint.mdb** will be copied into this folder.

## 6 Database management

ArcMap is also used for database management. This section will introduce joining databases together using common fields, altering record values and creating and automatically populating new fields using the codepoint data used above.

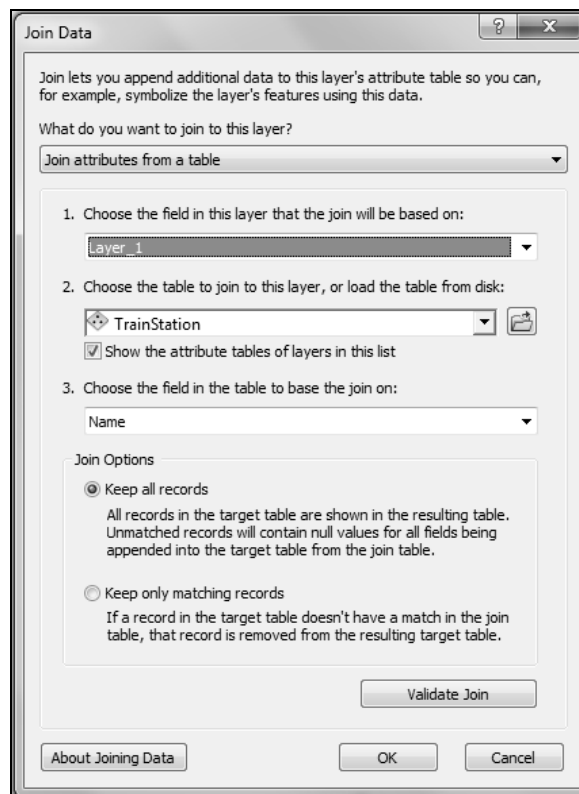
### 6.1 Database join

A database containing additional attribute information can be appended to a layer using a common field. For example, with the AdministrativeArea layer additional attributes such as number of population can be appended. There needs to be a common field to ensure that each code in polygon is matched to the population data.

The following example works through the steps to join a file, **PopulationSewerageZone.xlsx** to the

**AdministrativeArea** layer using the common field **CODE**.

1. Open **LocalDrive:/Data/GISDatabase/PopulationSewerageZone.xlsx** in Excel to view the data (when opening set **Files of type:** to **All Files (\*.\*)**). Note the first column contains postcodes. Look at the other columns headings to see what they contain.
2. Close Excel.
3. In ArcMap right-click **AdministrativeArea** in the TOC and select **Open Attribute Table**.
4. Move the attribute table and ArcMap window so that both can be seen on the screen, then right-click **AdministrativeArea** in the TOC and select **Joins and Relates | Join**.
5. In the **Join Data** dialog box make sure the top box is set to **Join attributes from a table**.
6. Set drop-down box **1.** to **CODE**. This is the join, or common field.
7. Click on the open button beside drop-down box **2.**, navigate to **LocalDrive:/Data/GISDatabase/**, highlight **PopulationSewerageZone.xlsx** and click **Add**.
8. Set drop-down box **3.** to **Code**. This is the join, or common field.
9. The completed dialog box should look as below when complete. Click **OK**:





10. The additional fields from PopulationSewerageZone.xlsx will now be displayed at the end of the CODE attribute table. The field names from AdministrativeArea will be pre-fixed AdministrativeArea.

To permanently join this new data to CODE the layer must be exported and given a new name. If this is needed right-click on AdministrativeArea in the TOC and select Data | Export Data. Do not do this now, but remove the join by right-clicking **AdministrativeArea** in the TOC and select **Joins and Relates | Remove Join(s) | Remove all Joins**.

## 6.2 Updating attribute data

Data, or attributes in a database table can be updated manually, or semi- automatically. The example below demonstrates how to do this manually and the subsequent section shows a semi-automated method.

To alter attributes in a table it first has to be made editable:

1. Turn on the Editor toolbar through the ArcMap menu **View | Toolbars | Editor**.
2. Select the **Editor** menu from the left-hand side of the Editor Toolbar and choose **Start Editing**.
3. Alter some of the data in the postcode field by clicking and typing in a cell in the attributes of AdministrativeArea table. Press the **Enter** key to confirm changes.

These changes will be permanent once saved, which we do not wish to do now. Choose **Stop Editing** from the **Editor** menu and select **No** to confirm these changes are not to be saved.

## 6.3 Creating and updating new fields

New fields can be added to an attribute table in ArcMap. Add a field called **poly\_size** and enter values into this:

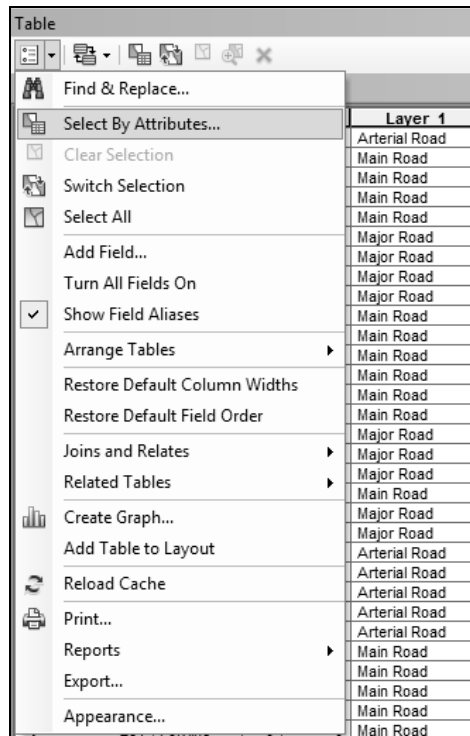
1. Click the **Options** button at the bottom right of the attribute table and select **Add Field**. If an 'Add Field Failed...' error message is given close ArcCatalog first.
2. Type **poly\_size** in the **Name:** field and set **Type:** to **Text**.
3. Under **Field Properties** set **Length** to **5**.
4. Click **OK**.

This new field can be updated based on a query on the **Shape\_Area** field:

- All postcode polygons with an area value between 0 and 600 are to be classified as **small**.
- All polygons with an area value greater than 600 are to be classified as **large**.

Select polygons with an area value between 0 and 600:

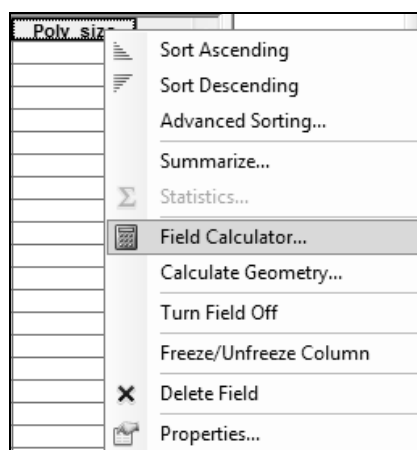
1. Select Options | **Select By Attributes:**



2. In the **Select by Attributes** dialog box that appears, use the Fields and operator buttons to enter the following in the lower white panel:
3. **[Shape\_Area] >0 AND [Shape\_Area] <=600**
4. Click **Apply** and 105 selected records will be shown highlighted.

For these highlighted records the poly\_size field needs the text **small** entering:

1. Right-click on the title bar of the poly\_size field, and choose **Calculate Values**:



2. Click **Yes** to the warning message shown, and in the field calculator dialog box enter "**small**" in the lower panel and click **OK**. Note: do not forget the quotes.

The text **small** will be entered into all the selected records. Do the same for the second criteria ("**Shape\_Area**" > 600) and enter **large** as the text. Close the Select By Attributes dialog box.

## 7 ArcGIS Help

The ArcGIS online Help provides in-depth help on using the software. To access it, go to **Start | Programs | GIS | ArcGIS | Desktop Help**.

There is also a full set of digital manuals provided with the software. These are available at **Start | Programs | GIS | ArcGIS | Digital Books**. The books are very comprehensive and provide tutorials on all the ArcGIS applications.

## 8 Exiting ArcMap

Save the map document (**practical1.mxd**) before you close ArcMap. This will be used again in Part 2. Close ArcMap using the menu **File | Exit**.

## 9 Importing Ordnance Survey and GPS data

This section will demonstrate importing Ordnance Survey Land-Line data downloaded from Digimap and displaying this together with data captured with a GPS unit.

This part builds on the work done in the Part 1 and covers importing GPS data, using raster data and creating a printable map.

Before starting open the map document **practical1.mxd** from the previous session:

1. Start ArcMap.
2. In the dialog box that appears select **An existing map** then click **OK**.
3. Navigate to **J:/giscourse**, select **practical1.mxd**.
4. Click **Open**.

## 10 Importing Ordnance Survey and GPS data

This section will demonstrate importing Ordnance Survey Land-Line data downloaded from Digimap and displaying this together with data captured with a GPS unit.

### 10.1 Using Land-Line compressed (zipped) data

The Ordnance Survey Land-Line data are contained in a zip file on the T: drive. It is common to compress files into a zip archive. They are smaller and provide a far more efficient method for backing-up data, e-mailing attachments, or downloading data from a web-site.

Create a new Data Frame and call it **Jakarta City** (select the menu **Insert | Data Frame** and right-mouse click the Data Frame name, select **Properties** and change the **Name:** field.)

### 10.2 Importing GPS data with ArcCatalog

GPS (Global Positioning System) is a collection of 27 NAVSTAR satellites orbiting the earth. Signals from these satellites can be collected by GPS receivers to determine the 3D position of the receiver. The cheapest handheld receivers can collect data at better than 10m accuracy. High-end receivers, combined with Differential GPS (combination of a roaming receiver and a fixed receiver at a known location) can improve accuracy to the sub-metre level.

The file **gps\_pts.txt** also extracted from the zip file to **'Local Drive':/giscourse** contain

co-ordinates of points collected by GPS from the Science Site. These data will be added into ArcMap to overlay the Land-Line data.

To display the **gps\_pts.txt** we first have to import the data using ArcCatalog:

1. Start ArcCatalog if it is not already running.
2. Navigate to '**Local Drive**':/giscourse, and double-click on **gps\_pts.txt** to view the file in Notepad. (Make sure the **Contents** tab is selected in the right-hand pane). If the file is not visible select the menu **View | Refresh**.

**gps\_pts.txt** is simply a text file containing a comma-separated list of latitude, longitude, altitude and time values.

3. Close Notepad.
4. In ArcCatalog right-click on **gps\_pts.txt** and select **Create Feature Class | From XY Table**.
5. Make sure **X Field:** is set to **Longitude**, and **Y Field:** is set to **Latitude**
6. The GPS points are in latitude/longitude coordinates. This must be specified so that they are imported correctly:

Click the **Spatial Reference of Input Coordinates** button, click **Select**, double-click **Geographic Coordinate Systems | World** and select **WGS 1984.prj**. Click **Add** then **OK**.

7. In the **Output** section at the bottom ensure Output Shapefile is set to:  
**J:/giscourse/XYgps\_pts.shp** then click **Advanced Geometry Options**.

To get the GPS points to overlay data already in the data frame **Jakarta City** the projections must match. Currently the **gps\_pts.txt** data are in latitude/longitude — they must be converted to Ordnance Survey Great Britain grid to match. To do this the following Output option must be set:

8. Click **Edit | Select | Projected Coordinate Systems | National Grids | Indonesia IDGN 1995 Indonesia TM-3 Zone 48.2**, then **Add**, then **OK**, then **OK**.
9. Finally, click **OK** to import to convert **gps\_pts.txt**.
10. Once complete go to ArcMap and add **J:/giscourse/XYgps\_pts.shp** to the **Jakarta City** data frame.

The GPS points will appear overlain on the University science site.

11. Before finishing this section save the map document with the menu **File | Save** and close down ArcMap using **File | Exit**.

## 11 Raster data

All the data used so far has been vector data (i.e. point, line or polygon features). Another important type of data used in GIS are raster data,

where features are broken up into individual cells, or pixels. Raster files can be quite large, but offer a wide range of analysis options

The following sections go through the process of converting vector data to raster, and then carrying out analysis on this data.

### 11.1 Add Elevation vector data

1. Start ArcMap up again, but do not open your previously saved Map document (practical1.mxd). Use the default blank document that is shown on start-up
2. In ArcMap rename the default **Layers** data frame to **Raster Analysis** (click once on the **Layers** label, then click again to edit the label).



3. Click the **Add Data** button.
4. Navigate to **GIS | Database** and highlight **elevation.shp**. Click **Add**.

### 11.2 Using Spatial Analyst

Advanced functionality in ArcMap is provided in Extensions, one of which is Spatial Analyst.

ArcMap will display raster data, but Spatial Analyst must be used for modelling and analysing raster data. We will use it first to convert the vector **elevation** data to raster format.

Extensions have to be turned on by adding a new menu bar to the ArcMap window:

1. Turn Spatial Analyst on by ticking its entry under **Tools | Extensions** then turn on its menu on by selecting **View | Toolbars** and left-mouse click the **Spatial Analyst** entry.
2. The Spatial Analyst menu appears in the ArcMap window.

### 11.3 Converting vector data to raster

To convert the vector data **elevation** to raster format:

1. From the Spatial Analyst menu bar choose Spatial Analyst | Convert | Features to Raster.
2. In the Features to Raster dialog box make sure Input Features: is set to elevation, Field: is set to Elevation (NOT Geology\_) and Output raster: is set to 'Local Drive':%giscourse%Jakarta\_dem
3. Click OK.

When the vector to raster conversion has finished the new raster data **Jakarta\_dem** will appear in the **Raster Analysis** Data Frame. Turn off the **elevation** vector layer first as it obscures layers below it. ArcGIS Raster data are in GRID format.

Navigate around **Jakarta\_dem** and use the identify tool to query cell values. The data contains the same geology attribute data as the vector data equivalent. Zoom into the data to see the individual cell pixels.

### 11.4 Digital Elevation Model — raster data

A Digital Elevation Model (DEM) is a raster representation of height data. In this example the heights are of land above sea level.

Add in a DEM of upper Tahoe to the Data Frame containing geology data:

1. Click on the **Add Data** button.

2. Navigate to **T:/its/gis**, highlight the **tahoe\_dem** and click **Add**. Turn off **Jakarta\_dem** if it obscures **tahoe\_dem**.

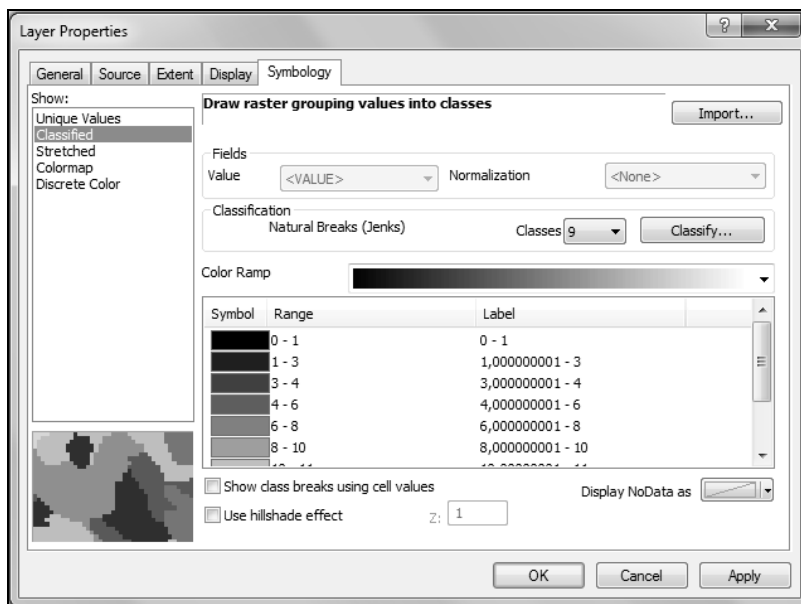
ArcMap automatically assigns a stretched colour ramp scheme to **tahoe\_dem**.

Navigate around **tahoe\_dem** and use the identity tool to query grid cell values. The values are in Feet above sea level.

### 11.5 Change classification of raster data

The stretched colour ramp automatically assigned by ArcMap is not always appropriate. This can be changed using Layer Properties:

1. Open the **Layer Properties** dialog for the **tahoe\_dem** layer by double-clicking on its entry in the TOC.
2. Make sure the **Symbology** tab is selected. To change to a classified scheme, click **Classified** on the left-hand side and change **Classes:** to 9:



The colour used can be changed from the **Color Ramp:** drop-down menu.

The individual values used for each class can be changed by clicking on the **Classify** button and altering the **Break** values for each class.

3. Click **OK** to accept changes.

### 11.6 Create slope map

Using a DEM, it is straightforward to create a raster showing the slope:

1. From the Spatial Analyst menu make sure that the **Layer:** is set to **tahoe\_dem** then choose the menu **Spatial Analyst | Surface Analysis | Slope**.
2. Click **OK** on the **Slope** dialog box.

A slope layer called **Slope of tahoe\_dem** is created, with slope values in degrees.

## 11.7 Integrating Raster data

It is now possible to use **Slope of tahoe\_dem** and **Jakarta\_dem** layers together to carry out suitability analysis.

Imagine the scenario where these data are to be used to find suitable locations for the siting of a granite quarry. We need to find areas of Cretaceous intrusives (i.e. Granite) that are on relatively flat land. So, from the slope layer we need to select areas that have a slope of less than 3 °, and from the **Jakarta\_dem** layer we want to select areas only containing Cretaceous intrusives as the surface geology.

Using Spatial Analyst functionality we can combine these conditions from both layers to create a suitability map:

1. Select **Spatial Analyst | Raster Calculator** from the menu.
2. Use the **Layers** entries and buttons to put the following formula into the query box at the bottom of the dialog box:

**[Slope of tahoe\_dem] < 3 & [Jakarta\_dem] == 1**

The value 1 from Jakarta\_dem corresponds to Cretaceous intrusives (granite).

3. Click Evaluate.

The resulting layer **Calculation** shows where the slope is less than 3 degrees, and granite is present. Calculation is coded with 0 = false, and 1 = True (i.e. suitable – the criteria is satisfied with granite located in areas with slope < 3

To view the layers under Calculation double-click it's entry in the TOC and under the **Display** tab set transparency to 30%.

The calculation is not permanent and will be automatically deleted when ArcMap is closed down. To make this calculation permanent save it to the J: drive and call it **suitability**:

1. Right-click on **Calculation** and select **Make Permanent**.
2. Navigate to J:\giscourse and enter **suitability** in the **Name:** field.
3. Click **Save**.
4. This layer can be renamed in the Table of Contents – click once on the Calculation label in the TOC and click again to edit it – rename it Suitability.

These three criteria may not be sufficient to base a decision on. Further analysis could include combining information on, for example, protected areas where quarrying may be not allowed or ease of access by road.

Before starting the next section save the map document as **j:/giscourse/rasterdata.mxd**.

## 12 Producing final output - The Layout View

The suitability layer produced in the previous section will now be used to create a presentation-quality layout ready for printing.

## 12.1 Creating a Layout

Although printing can be done directly from the Data View, for final map output the Layout View is recommended. The Layout View is used to display the map along with a north arrow, scale bar, legend, graphs, explanatory text etc.

Create and print a Layout View from the Suitability layer:

1. First, remove all layers except **suitability** from the **Raster Analysis** data frame. To do this right-click each layer in turn in the TOC, and select **Remove**.

2. Select **Layout View** from the icon just below the bottom left of the map:



As default a neat line is added around the map.

Set the Data Frame units to meter so that the scale bar is correct:

1. Select the menu View | Data Frame Properties.
2. On the General tab under Units set both Map: and Display: to Meter.
3. Click OK.
4. Select the menu Insert | Scale Bar, choose Properties and set Division Units to Meter.
5. Click OK and OK again.
6. Insert a title, legend and north arrow from the menu Insert.
7. Move the elements to appropriate places on the map by clicking and dragging with the mouse.
8. Finally, insert a text box and include a copyright note:

When using data it is very important to acknowledge the copyright holder. In this case the map has been created from ESRI data, so the note should say:

**Copyright ESRI**

## 12.2 Printing the map

Printing from ArcMap is relatively straightforward:

1. To print the Map, select **File | Print** from the menu bar.
2. The default printer is the **Self Service** black and white laser printer. If this is not suitable, click on **Setup** and choose a printer from the drop-down list below **Name**:
3. Click **OK** and **OK** again to print.

There are a range of printers available, including A4, A3 and A0 Black & White and Colour - for a full list look at: [www.dur.ac.uk/its/services/printing/](http://www.dur.ac.uk/its/services/printing/)



## 13 Exporting maps to use in other applications

Maps are commonly placed into other applications, for example a Microsoft Word document or for inclusion in a web page.

To export a map choose **File | Export Map** and choose **JPEG** or another format as the **Save as type**. Enter a **File Name** and click **Save**.

To use a JPEG file in Microsoft Word, select **Insert | Picture | From File**, select the JPEG file and click on **Insert**.

To paste a Layout into Word highlight the Layout in ArcMap, select **Edit | Copy**, open Word and select **Edit | Paste**.

Finally, save the map document (**rasterdata.mxd**) and select **File | New** from the menu to create a Blank Document.

## 14 ArcToolbox

ArcToolbox provides access to advanced geoprocessing functionality and will be used here to alter vector data.

Turn on the ArcToolbox window on by selecting **Window | ArcToolbox**.

### 14.1 Dissolve

This example shows how to dissolve polygon data based on an attribute. The data are regions of France which are to be dissolved to create a country boundary:

1. Add in **T:/its/gis/geoprocessing\_data/Level\_1\_Provinces/France\_regions**
2. From ArcToolbox select **Data Management Tools | Generalization | Dissolve**.
3. Click **Show Help** to understand what Dissolve does.
4. Select **France\_regions** from the drop-down box under Input features.
5. Under **Output Feature Class** enter **J:/giscourse/France\_dissolve.shp**.
6. Tick the correct attribute under **Dissolve\_field(s)** (i.e. the attribute to dissolve on which is **CNTRYABBR**). This attribute will be the same for each region i.e. the country name, France.
7. Click **OK**.

Once dissolve is complete the output file will be added to ArcMap. Look at what has happened. Also look at the **CNTRYABBR** in the attribute table of the original data to understand what Dissolve has done.

### 14.2 Clip

Data often covers an area far larger than that required, which can slow down analysis and mean file sizes are too large. Clip allows data to be ‘cookie-cut’ to the required study area. The following show how to clip out an area from the data created in the last example.

1. Remove all layers from the currently active data frame except the dissolved layer.

2. Add in **T:/its/gis/geoprocessing\_data/ Level\_1\_Provinces /study\_area**
3. This new layer is a polygon which defines the limit of a hypothetical study area.
4. Select **ArcToolbox | Analysis Tools | Extract | Clip**.
5. **Show Help** describes the clip tool.
6. Select the **France\_dissolve** layer under **Input Features**.
7. Select **study\_area** as the polygon clip layer under **Clip Features**.
8. Enter an **Output Feature Class** name.
9. Click **OK**.

Turn off study\_area and France\_dissolve to see the output from Clip.

### 14.3 Union

Union will combine multiple layers into a single one. This example shows how to merge two layers; one containing the country boundary of Norway, the other of Sweden:

1. Create a new Data Frame and add in  
**:/its/gis/geoprocessing\_data/countries/norway and sweden.**
2. Select **ArcToolbox | Analysis Tools | Overlay | Union**.
3. Select **View Help** for an explanation of Union.
4. Select norway and sweden in turn from **Input features**.
5. Set **Output feature Class** to **c:/temp\norswe.shp**. Do not save to your J:/ drive as the output file is large. Note: all files in c:/temp are deleted when logging off an NPCS machine.
6. Click **OK**.
7. The new merged layer will be added to the map.
8. Turn off the existing norway and sweden layers and confirm that
9. Union worked correctly in the new file.

Look in the Index tab at the bottom of the ArcToolbox window for other commands e.g. Intersect and Merge.

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# 1 Pendahuluan

## 1.1 Tujuan

*Geographical Information Systems (GIS)* digunakan untuk menampilkan, memanipulasi, dan analisis data *spatial* (peta). Data *Spatial* adalah data yang mengandung rujukan pada suatu tempat (dalam kasus pelatihan kali ini merujuk pada suatu tempat dibumi).

Para peserta diharapkan berdiskusi tentang aplikasi alat ini sebagai berikut:

- Pengumpulan data termasuk bidang pekerjaan (*Field Work*)
- Aplikasi untuk masing-masing bidang

## 2 ArcGIS

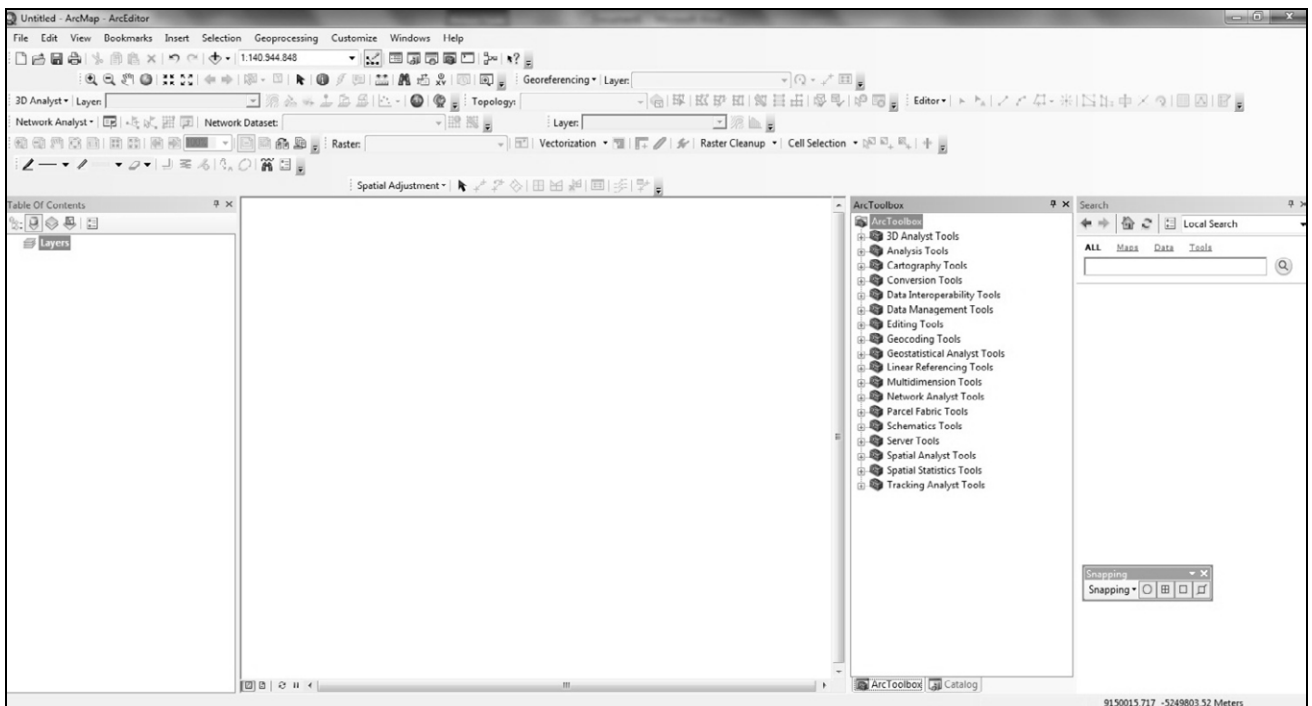
*ArcGIS* mempunyai 5 aplikasi terpisah — *ArcMap*, *ArcCatalog*, *ArcToolbox*, *ArcScene* dan *ArcGlobe*. Hanya *ArcMap* yang akan digunakan dalam sesi ini; *ArcCatalog*, *ArcScene* dan *ArcToolbox* akan diperkenalkan kemudian.

### 2.1 ArcMap

*ArcMap* digunakan untuk menampilkan data peta (*spatial*). Juga digunakan untuk meng-edit, pertanyaan (*query*), dan analisa data peta.

Untuk memulai *ArcMap* pilih menu **Start / Programs / GIS / ArcGIS / ArcMap**

*ArcMap* akan menunjukkan 'welcome screen'. klik **OK**, dan *ArcMap* akan menampilkan peta kosong seperti dibawah ini:



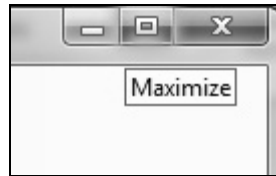
Bagian-bagian berikutnya dilakukan dengan menambahkan data ke peta, menjelajah (navigasi)

sekitar peta, dan akhirnya memberikan warna dan gaya.

## 2.2 Menambahkan data *spatial* ke *ArcMap*

Penambahan data ke peta dalam *ArcMap* disebut sebagai **Layers**. Langkah-langkah berikut adalah cara menambahkan beberapa *layer* ke dalam *ArcMap*.

Perbesar jendela *ArcMap* dengan mengklik tanda 'maximize' di sudut kanan atas:



Untuk menambahkan sumber data:


Klik logo 'Add Data'  pada tombol *bar*,

Atau

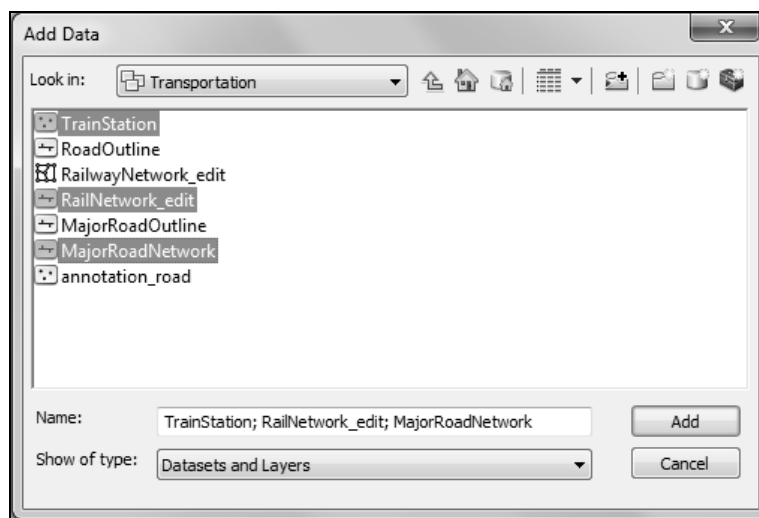
Pilih **File / Add Data** dari *menu bar*. Akan muncul kotak dialog **Add Data**.

Bagian ini menggunakan contoh dari peta topografi dengan skala 1:5 000 dari data DKI Jakarta. Data yang dibutuhkan ada didalam folder **Local Drive:/Data/GISDatabase/**.

Untuk mengakses data ini, sebelumnya kita harus terhubung kedalam folder yang mengandung data:

1. Klik pada tanda **Connect To Folder** , arahkan ke **Local Drive:/Data/** dan klik **OK**.
2. Klik pada Folder **GISDatabase/BaseMap2010/**
3. Klik dua kali (double klik) **Transportation**. Akan muncul daftar data *layer*.

Pilih semua data *layer* dengan mengklik satu kali pada tiap daftar secara bergantian, selagi menahan ke bawah tombol **Ctrl** atau **Shift**:

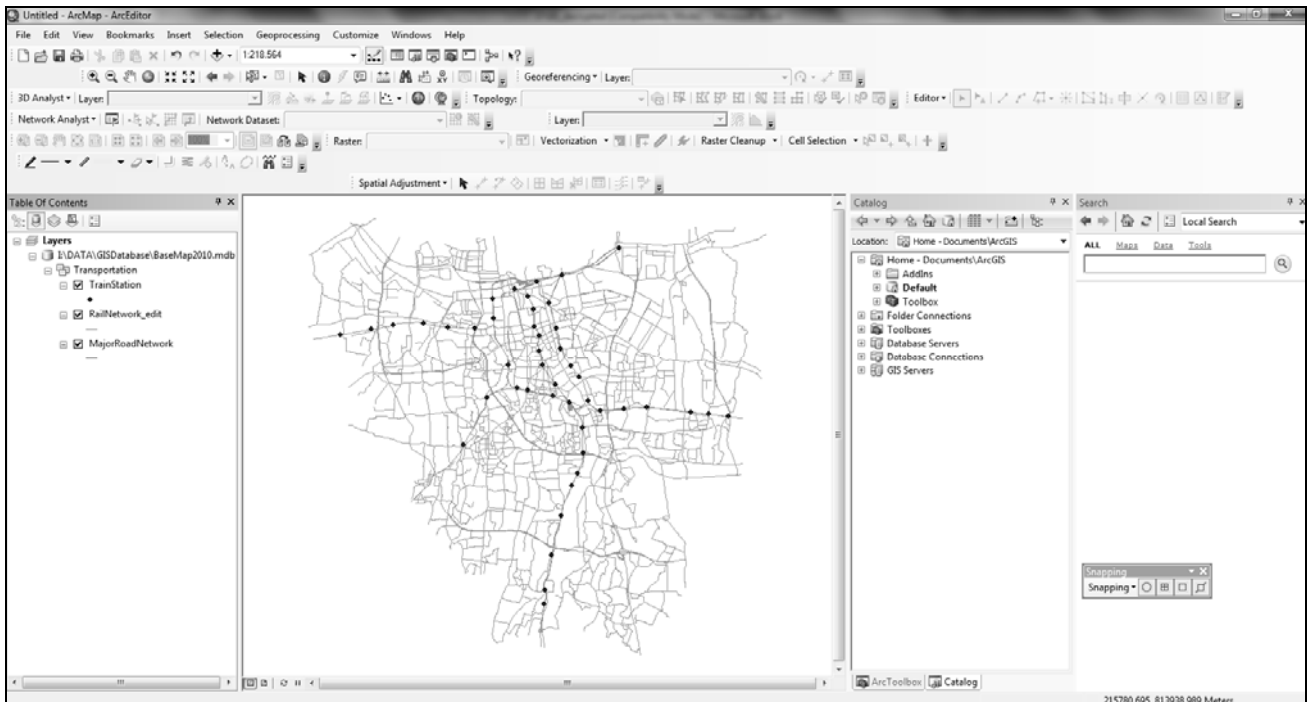


1. Setelah semua data yang dibutuhkan tersorot klik pada **Add**
2. Abaikan pesan yang mengatakan 'One or more layers is missing spatial reference information' (satu atau lebih *layer* kehilangan referensi informasi *spatial*), dan klik **OK**.

Ulangi prosedur yang sama untuk **Administration** dan pilih **AdministrationArea**.

### 2.3 Menampilkan data *spatial* di ArcMap

Setiap *layer* mempunyai *entry* didalam daftar isi/*Table of Contents (TOC)* ditampilkan di sisi kiri dari jendela. Ada kotak tebal sepanjang setiap *layer* yang digunakan untuk menghidupkan/mematikan tampilan *layer*.



*Dataset* ini muncul agak cepat pada layar, tapi bila Anda ingin menyetop layar *re-draw*, sebagai contoh dengan *dataset* yang besar, tekan tombol **ESC** untuk meng-*cancel re-draw*.

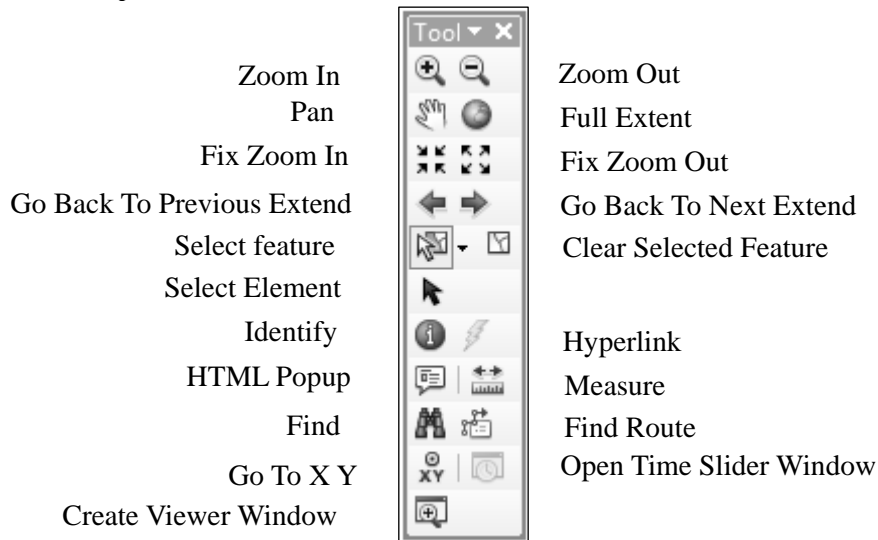
Posisi sebuah *layer* di *TOC* menentukan urutan gambar. *ArcMap* secara otomatis mengurutkan masukan ini sehingga *layer-layer* polygon (misalnya *AdministrationArea*) dibawah *TOC*, dengan garis *layer* diatas sehingga tidak dikaburkan oleh polygon. Point *layer* juga akan ditampilkan diatas polygon untuk alas an yang sama.

Hal ini dimungkinkan untuk mengubah lapisan gambar (*layer*). Ini akan dibahas kemudian.

Jenis data yang digunakan sejauh ini dikenal sebagai data vector. Data vector dapat terdiri dari titik, garis, atau fitur-fitur poligon dan biasanya digunakan untuk data yang perlu ditampilkan secara cepat, dan ketika banyak control diperlukan untuk fitur pengaturan warna dan gaya. Ukuran file vektor juga cukup kecil.

### 2.4 *ArcMap* navigation tools

*ArcMap* mempunyai alat navigasi yang terletak pada tools toolbar yang mengambang, ditunjukkan di kanan dari jendela *ArcMap*:



Tempatkan kursor mouse pada masing-masing tombol secara berurutan untuk mendapatkan penjelasan singkat tentang tujuannya (ditampilkan di bar bagian kiri bawah jendela *ArcMap*). Cobalah menggunakan beberapa alat ini.

Perhatikan saat Anda memindahkan kursor di sekitar jendela *ArcMap* bahwa posisi kursor ditampilkan dibagian bawah pada jendela *ArcMap*:

247466,494 818602,394 Meters

Ini adalah posisi dunia nyata dari fitur yang kursor berada melayang di atas. Koordinat (dalam meter) ditampilkan untuk data peta dasar (Basemap) ini adalah sama sebagai yang akan dibaca dari peta kertas (*hard copy*) daerah tersebut.

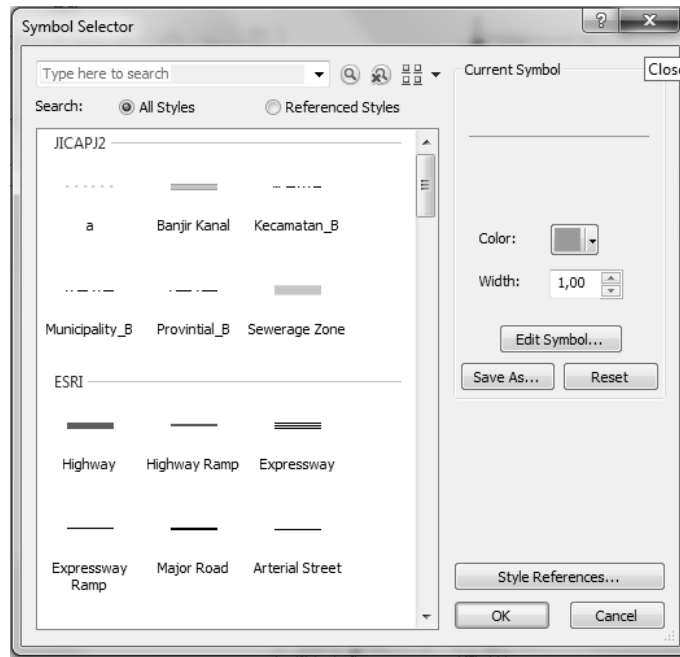
## 2.5 Memberi warna dan gaya pada *layer-layer*

*ArcMap* akan secara otomatis memberi warna dan gaya pada tiap *layer*. Hal ini sangat jarang cocok, namun dapat diubah menggunakan simbol **Symbol Selector**.

Untuk mengubah tampilan warna dan gaya pada *layer*:

1. Pada **TOC** klik tanda yang ingin dimodifikasi (contoh **MajorRoadNetwork** symbol yang berada diatas entry). Akan muncul kotak dialog **Symbol Selector**:





2. Mengubah warna (**Color**): dan **Width**: untuk membedakan jalan raya (*motorways*) dari *layer* lainnya.
3. Klik **OK** ketika selesai. Peta akan menggambar ulang untuk merefleksikan segala perubahan yang terjadi.

Sekarang akan menjadi waktu yang tepat untuk mengubah urutan gambar dari *layer* sehingga jalan raya (*motorways*) yang ditampilkan di atas semua jalan lain.

1. Klik dan tahan tombol mouse kiri pada masukan **TOC MajorRoadNetwork** pada *layer* yang akan disorot.
2. Pindahkan mouse keatas **TOC** — sebuah garis hitam tebal akan ditampilkan pada layar yang akan disisipi — dan lepaskan tombol mouse ketika garis hitam ada di posisi yang diinginkan, sebagai contoh diatas semua *layer* lain.

## 2.6 Memberi label sebuah *layer*

Untuk menampilkan label-label untuk sebuah *layer*:

1. Pada **TOC** klik kanan *layer* yang ingin diberi label dan pilih **Properties** (lakukan ini untuk **a\_roads**).
2. Klik tab **Labels**.
3. Dari **Label Field**: pilih bagian untuk label dengan (**NU**). Catatan: **NU** adalah nama sebuah bagian atribut yang mengandung angka-angka jalan.
4. Klik **OK**.
5. Pada **TOC** klik kanan *layer* **a\_roads** dan pilih **Label Features**. Zoom pada peta untuk menampilkan label-label.

## 2.7 Menyimpan sebuah dokumen *ArcMap*

Tampilan pengaturan yang sudah ditetapkan selama sesi *ArcMap* saat ini akan hilang setelah *ArcMap* yang keluar. Hal tersebut dapat, bagaimanapun, akan disimpan untuk penggunaan yang akan datang dengan menyimpannya sebagai dokumen peta *ArcMap*. Pada tahap ini akan masuk akal untuk membuat folder di mana untuk menjaga dokumen peta ini, dan semua file lain yang digunakan selama pelatihan.

1. Buat sebuah folder baru disebut *giscourse* pada drive **J:** Anda — gunakan *Windows Explorer* atau *My Computer* untuk melakukan hal ini.
2. Pada *ArcMap* pilih **File / Save**, berikan nama pada dokumen peta tersebut (sebagai contoh *practical1.mxd*), dan save ke drive **J:** anda di folder *giscourse*.

Lain kali Anda menggunakan *ArcMap* pilih **File / Open** untuk mengambil dokumen peta *ArcMap* yang sudah Anda simpan.

Catatan: Sebuah dokumen peta *ArcMap* hanya berisi pengaturan tampilan - itu tidak termasuk data aktual. Hanya untuk referensi data yang disimpan, sehingga jika semua data yang direferensikan dalam proyek ini adalah pada T: drive, waktu berikutnya proyek ini dibuka, akan mengambil data dari T: drive lagi. Jika Anda perlu back-up, atau mengirim dokumen peta ke seorang rekan, baik dokumen peta dan data yang terkait harus dimasukkan.

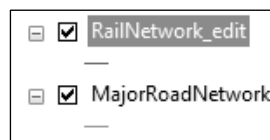
## 3 Data Atribut dan *spatial querying*

### 3.1 Mengakses data atribut di *ArcMap*

Setiap fitur pada peta mempunyai kaitan informasi yang dimiliki dalam format tabel. Ini dikenal sebagai data atribut.

Ada dua cara untuk mengakses data atribut di *ArcMap* — menggunakan identify tool, atau dengan menampilkan semua *tabel* untuk sebuah layar.

1. Pertama, pilih *layer urban* dalam tabel isian dengan mengklik dengan tombol kiri mouse (nama *layer* akan disoroti) :

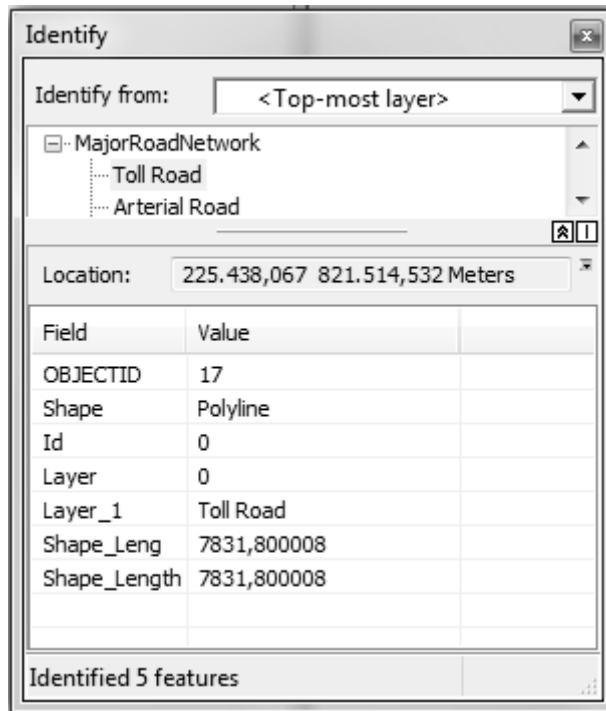


### 3.1.1 Menggunakan *Identify tool*



Identify

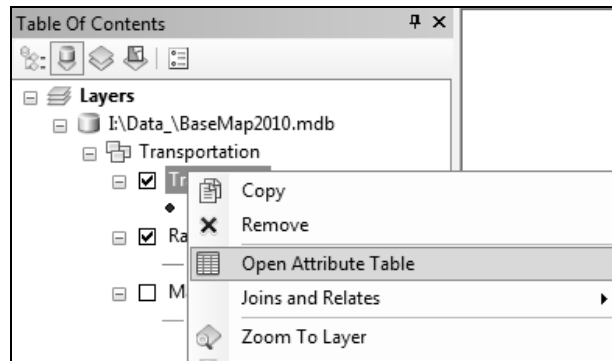
1. Klik pada tombol *Identify* pada alat toolbar yang mengambang, maka pada fitur pada peta dalam *layer* yang disorot (yaitu urban). Data atribut pada *layer* akan muncul di Hasil Identifikasi (*identify results*)



2. Lakukan hal yang sama pada *layer a\_roads* dan lihatlah pada bagian kolom — nilai masukan *NU* mengandung nama jalan (ini digunakan pada tahap awal untuk memberi label pada jalan).

### 3.1.2 Menampilkan tabel yang lengkap

Tabel atribut lengkap untuk *layer* dapat diakses dengan mengklik kanan pada entri *TOC* untuk *layer* dan memilih *Open Attribute Table* dari menu. Lakukan ini untuk *layer a\_roads* :



Tutuplah tabel ketika sudah selesai.

### 3.2 Querying (melihat) data atribut

#### 3.2.1 Menggunakan 'Select' (pilihan) dengan Atribut

Sebuah tabel atribut dapat dilihat (yaitu pencarian untuk catatan/*records*) dengan menu **Select By Attributes**.

1. Pilih Selection | Select By Attributes dari bar menu. Akan muncul kotak dialog Select By Attributes.

Sebagai contoh, pilih pilihan **MajorRoadNetwork** yang bernama '**Jenderal Sudirman**' dengan memasukkan bagian untuk mencari/search di "**RoadName**", dan ketik teks '**Jenderal Sudirman**' untuk mencari.

Untuk melakukan hal ini, pada tampilan kotak dialog 'Select By Attributes':

2. Cek **Layer** tersebut: apakah sudah ter-set pada **MajorRoadNetwork**.
3. Pada **Fields**: pada daftar di sebelah kiri dari kotak dialog klik "RoadName", kemudian double-klik 'RoadName' untuk menyisipkan ke dalam kotak pilihan di bagian bawah.
4. klik tanda = , klik **Get Unique Values** dibawah kotak '**Unique values**' di kanan kemudian double-klik '**Jenderal Sudirman**' dari daftar resultant.

Ketika sudah selesai, kotak dialog harus terisi seperti dibawah ini.

5. Klik tombol **Apply** dan kemudian tutup.



Semua **MajorRoadNetwork** mengandung '**Jenderal Sudirman**' pada bagian **RoadName** saat ini akan tersorot dengan biru terang pada peta.

1. Untuk menge-zoom fitur terpilih pada peta, pilih menu **Selection | Zoom to Selected Features**.
2. Buka *tabel* atribut (klik-kanan pada **MajorRoadNetwork** di *TOC* dan pilih **Open Attribute Table**).

Semua rekaman terkait juga akan tersorot pada tabel.

1. Untuk menampilkan hanya rekaman terpilih dari daftar, tekan tanda **Selected**.
2. Untuk mengganti pilihan *tabel* ke semua rekaman (records) yang tidak mempunyai **MajorRoadNetwork = 'Jenderal Sudirman'** klik **ALL**, lalu tombol **Options** dan pilih **Switch Selection** dari menu.
3. Tutup tabel.

### 3.2.2 Menggunakan '*Find*'



#### **Find**

*Find* dapat digunakan sebagai alternative untuk memilih dengan atribut. Menemukan pencarian semua data atribut dan mengembalikan daftar yang cocok.

1. Tekan tombol **Find** pada Tools toolbar, dan enter **Sudirman** pada kotak **Find**.
2. Tekan **Find**.

Semua kejadian Sudirman akan ditampilkan dalam kotak di bagian bawah kotak dialog. Klik kanan pada salah satu baris untuk **Flash feature**, **Zoom to feature**, dll. Anda mungkin perlu untuk memperkecil (zoom out) peta (gunakan tombol **Full Extent** pada alat toolbar) untuk melihat fitur flash.

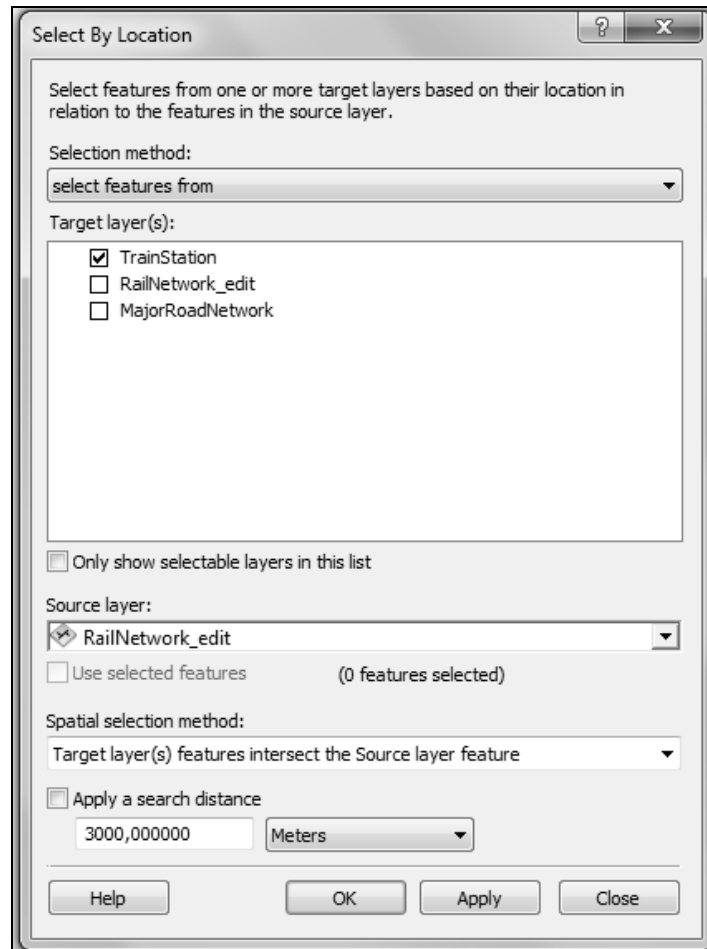
Tutup kotak dialog *Find* ketika selesai dan pilih menu **Selection | Clear Selected Features**.

### 3.3 Menampilkan sebuah *spatial query*

Salah satu fitur penting dalam GIS adalah kemampuan untuk melaksanakan *spatial queries*, yaitu pada posisi relatif dari fitur. Ini membedakan GIS dari aplikasi pemetaan murni.

Pilihan menu **Select By Location** memungkinkan kita untuk melakukan pencarian data *spatial*. Sebagai contoh, kita mungkin ingin melihat semua daerah perkotaan yang dilalui oleh jalan raya:

1. Pilih menu Selection | Select By Location.
2. Pastikan memilih fitur dari pilihan di kotak pertama.
3. Tandai `AdministrativeArea` di kotak kedua.
4. Pilih intersect dari kotak ketiga.
5. Pilih



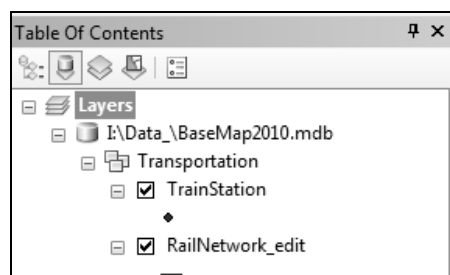
MajorRoadNetwork dari kotak keempat:

6. Terakhir, klik Apply dan kemudian tutup.
7. Daerah perkotaan yang terpilih akan ditampilkan dalam warna biru terang pada peta.
8. Untuk memperbesar fitur terpilih, pilih menu Selection | Zoom To Selected Features.

## 4 Data Frames

Selain overlay data dalam peta, kita dapat membuat beberapa bingkai data (data frames) untuk menampilkan data dari wilayah geografis yang berbeda atau untuk *dataset* grup terkait secara bersama-sama .

Data Frame standar disebut sebagai **Layers**. Ini adalah Data Frame yang kita gunakan selama ini:




1. Untuk menambah *Data Frame* baru, pilih menu **Insert / Data Frame**. *Data Frame* yang aktif ditunjukkan dengan huruf tebal pada *TOC*.
2. Untuk membuat *Data Frame* aktif, klik-kanan pada nama ***Data Frame*** di *TOC* dan pilih pilihan menu **Activate**.
3. Untuk merubah nama *Data Frame*, klik-kanan pada nama *Data Frame*, pilih **Properties** dan ubah **Name: field**. Beri nama kembali (*rename*) *Data Frame* baru ke **Codepoint Data**.

*Layer* untuk menunjukkan *Data Frame* baru ini akan ditambahkan dalam sesi berikutnya.

## 5 ArcCatalog — Mengelola data

*ArcCatalog* adalah aplikasi lain *ArcGIS* dan digunakan untuk mengakses dan mengelola data. Secara khusus, dapat digunakan untuk memindahkan, mengubah nama dan menyalin *dataset*, dan menampilkan (*preview*) geografis dan data atribut. Hal ini terutama berguna untuk *back up* data.

*ArcCatalog* digunakan di sini untuk melihat dan menyalin contoh *layer* yang akan digunakan untuk menunjukkan konsep *ArcGIS* dan fungsinya, dan mengikuti bagian-bagiannya.

1. Buka *ArcCatalog* dengan selecting **Start / Programs / GIS / ArcGIS / ArcCatalog**
2. Klik pada sambungan **Local Drive:¥Data¥GISDatabase¥** pada panel sebelah kiri jendela *ArcCatalog* (Anda mungkin harus membuat koneksi data dengan mengklik tanda folder ).
3. Klik tanda tambah disamping **LocalDrive:¥Data¥GISDatabase¥** dan double-klik **PopulationSewerageZone.xlsx** di layar sebelah kira dan sorot **Sheet1\$**.
4. Klik tab **Preview** untuk menampilkan **Sheet1\$**. Data tersebut adalah data populasi penduduk di kelurahan di kota Jakarta. Ubah tampilan: di bagian bawah layar untuk **Tabel** untuk menampilkan data atribut terkait.

Gunakan *ArcCatalog* untuk membuat **WellPoint.shp** ke **LocalDrive:/Data/GISDatabase** folder Anda:

1. Klik kanan **GISDatabase folder** pada panel sebelah kiri dan pilih **new Shapefile**.
2. Namai *shapefile* dengan memasukkan **WellPoint** pada bagian nama dan tekan **OK**.

Arahkan ke **J:/giscourse/**, klik-kanan pada panel sebelah kanan (pastikan tab **Contents** terpilih) dan pilih **Paste**. **Codepoint.mdb** akan tersalin ke folder ini.

## 6 Pengelolaan Database

*ArcMap* juga digunakan untuk pengelolaan *database*. Bagian ini akan memperkenalkan gabungan bersama-sama dengan menggunakan *database* bidang umum, mengubah nilai catatan dan menciptakan dan secara otomatis mengisi bagian baru dengan menggunakan data *codepoint* digunakan di atas.

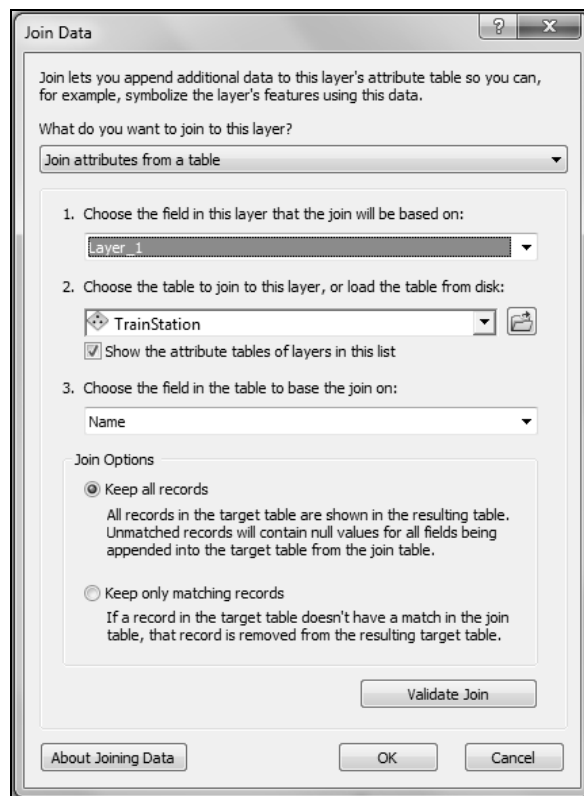
### 6.1 Database join

Sebuah *database* yang berisi informasi atribut tambahan dapat ditambahkan ke *layer* dengan



menggunakan bagian umum. Misalnya, dengan *layer AdministrativeArea* atribut tambahan seperti jumlah populasi dapat ditambahkan. Perlu ada bagian umum untuk memastikan bahwa setiap kode dalam poligon cocok dengan data populasi .  
Contoh berikut ini bekerja melalui langkah-langkah untuk penggabungan file, *PopulationSewerageZone.xlsx* ke *layer AdministrativeArea* menggunakan bagian umum *CODE*.

1. Buka *LocalDrive:/Data/GISDatabase/PopulationSewerageZone.xlsx* di *Excel* untuk menampilkan data (ketika membuka *set Files of type: ke All Files (\*.\*)*).Perhatikan kolom pertama berisi kode pos. Lihatlah judul kolom lain untuk melihat apa yang didalamnya.
2. Tutup *Excel*.
3. Pada *ArcMap* klik-kanan *AdministrativeArea* di *TOC* dan pilih **Open Attribute Table**.
4. Pindahkan tabel atribut dan jendela *ArcMap* sehingga keduanya dapat dilihat dilayar, kemudian klik-kanan *AdministrativeArea* pada *TOC* dan pilih **Joins and Relates / Join**.
5. Pada kotak dialog **Join Data** pastikan kotak ats ter-set pada **Join attributes from a table**.
6. Set kotak *drop-down 1*, pada **CODE**. Ini adalah gabungan atau bagian umum (*common field*).
7. Klik pada tombol open disamping kotak *drop-down 2*., arahkan ke *LocalDrive:/Data/GISDatabase/*, sorot *PopulationSewerageZone.xlsx* dan klik **Add**.
8. Set kotak *drop-down 3*, pada **Code**. Ini adalah gabungan atau bagian umum (*common field*).
9. Kotak dialog yang komplit dapat dilihat dibawah ini ketika sudah komplit. Klik **OK**:



10. Bagian tambahan dari *PopulationSewarageZone.xlsx* sekarang akan ditampilkan pada bagian akhir tabel atribut *CODE*. Nama bagian dari *AdministrativeArea* akan menjadi *pre-fixed AdministrativeArea*.

Untuk bergabung secara permanen data baru ini ke *CODE*, *layer* harus diekspor dan diberi nama baru. Jika ini diperlukan klik kanan pada *AdministrativeArea* di *TOC* dan pilih *Data / Export Data*. Jangan lakukan ini sekarang, tetapi hapus gabungan dengan mengklik kanan *AdministrativeArea* pada *TOC* dan pilih *Joins and Relates / Remove Join(s) / Remove all Joins*.

## 6.2 Meng-Update data atribut

Data, atau atribut dalam tabel database dapat diperbarui secara manual, atau semi-otomatis. Contoh di bawah menunjukkan bagaimana melakukan ini secara manual dan bagian berikutnya menunjukkan sebuah metode semi-otomatis.

Untuk mengubah atribut dalam tabel terlebih dahulu harus dibuat agar dapat diedit:

1. Hidupkan *toolbar Editor* melalui menu *ArcMap View / Toolbars / Editor*.
2. Pilih menu **Editor** dari sisi kanan-tangan dari *toolbar Editor* dan pilih *Start Editing*.
3. Mengubah beberapa data di bagian kode pos dengan mengklik dan mengetik di sel dalam atribut tabel *AdministrativeArea*. Tekan **Enter** untuk mengkonfirmasi perubahan.

Perubahan ini akan disimpan secara permanen, yang mana tidak ingin kita lakukan sekarang. Pilih **Stop Editing** dari menu **Editor** dan pilih **No** untuk mengkonfirmasi perubahan ini tidak untuk disimpan.

## 6.3 Membuat dan memperbarui bagian baru (*new fields*)

Bagian baru (*New fields*) dapat ditambahkan kedalam tabel atribut pada *ArcMap*. Tambahkan bagian yang disebut **poly\_size** dan masukkan nilai-nilai pada hal berikut:

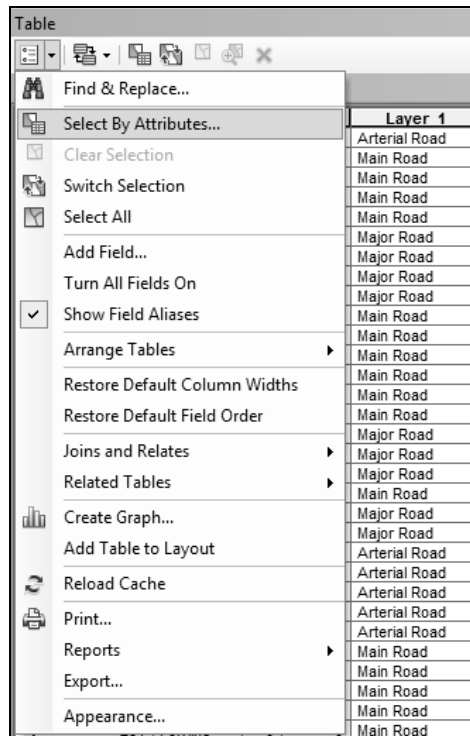
1. Klik tombol *Options* pada kanan bawah dari tabel atribut dan pilih **Add Field**. Jika ada sebuah pesan '*Add Field Failed...*' tutup *ArcCatalog* terlebih dahulu.
2. Ketik **poly\_size** pada *Name: field* dan set *Type:* ke **Text**.
3. Dibawah *Field Properties* set **Length** ke **5**.
4. Klik **OK**.

Bagian baru ini dapat diperbarui berdasarkan pertanyaan (*query*) pada bagian **Shape\_Area** :

- Semua kode pos *polygon* dengan nilai *area* diantara 0 dan 600 dapat diklasifikasikan sebagai kecil (*small*).
- Semua *polygon* dengan nilai *area* lebih besar dari 600 dapat diklasifikasikan sebagai besar (*large*).

Pilih *polygon* dengan nilai *arena* diantara 0 dan 600:

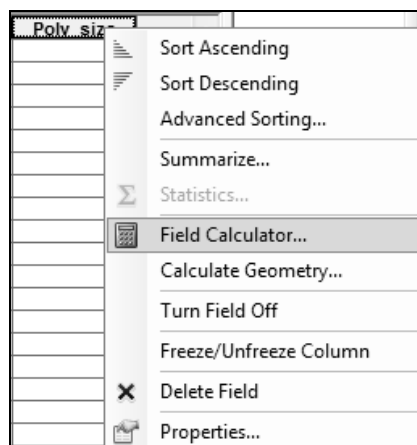
1. Pilih *Options / Select By Attributes:*



2. Pada kotak dialog **Select by Attributes** yang muncul, gunakan tombol Fields dan operator untuk memasukkan berikut ini di panel putih:
3. **[Shape\_Area] >0 AND [Shape\_Area] <=600**
4. Klik **Apply** dan 105 rekaman terpilih akan ditunjukkan dengan sorotan (*highlight*).

Untuk rekaman yang telah tersorot ini poly\_size field membutuhkan masukan teks **kecil (small)**:

1. Klik kanan pada bar judul *poly\_size field*, dan pilih **Calculate Values**:



2. Klik **Yes** pada pesan peringatan yang ditunjukkan, dan pada bagian kotak dialog kalkulator masukkan "**small**" di bagian bawah panel dan klik **OK**. Catatan: jangan lupa tanda kutipnya.

Teks **small** akan dimasukkan ke semua rekaman terpilih. Lakukan hal yang sama untuk kriteria kedua ("**Shape\_Area**" > 600) dan masukan teks **large**.

Tutup kotak dialog *Select By Attributes*.

## 7 *ArcGIS Help*

*ArcGIS* online Help menyediakan bantuan secara mendalam untuk penggunaan software. Untuk mengaksesnya, ke **Start | Programs | GIS | ArcGIS | Desktop Help**.

There is also a full set of digital manuals provided with the software. These are available at **Start | Programs | GIS | ArcGIS | Digital Books**. The books are very comprehensive and provide tutorials on all the *ArcGIS* applications.

## 8 *Keluar ArcMap*

Simpan dokumen peta (**practical1.mxd**) sebelum Anda menutup *ArcMap*. Ini akan digunakan lagi pada bagian 2. Tutup *ArcMap* menggunakan menu **File | Exit**.

## 9 *Mengimpor Ordnance Survey dan data GPS*

Bagian ini akan menunjukkan bagaimana mengimpor data Ordnance Survey Land-Line yang didownload dari Digimap dan menampilkan bersama-sama dengan data yang diambil dengan unit GPS.

Bagian ini dibangun di atas pekerjaan yang dilakukan di Bagian 1 dan mencakup data impor GPS, menggunakan data raster dan membuat peta tercetak.

Sebelum memulai, buka dokumen peta *practical1.mxd* dari sesi terdahulu:

1. Start *ArcMap*.
2. Pada kotak dialog yang muncul pilih *An existing map* lalu klik **OK**.
3. Arahkan ke *J:\giscourse*, pilih *practical1.mxd*.
4. Klik **Open**.

## 10 *Mengimpor data Ordnance Survey dan GPS*

Bagian ini akan menunjukkan bagaimana mengimpor data Ordnance Survey Land-Line yang didownload dari Digimap dan menampilkan bersama-sama dengan data yang diambil dengan unit GPS.

### 10.1 *Menggunakan data Land-Line compressed (zipped)*

Data Ordnance survey land-Line terkandung dalam sebuah file zip pada T: drive. Hal ini umum untuk mengkompres file ke dalam arsip zip. Hal itu lebih kecil dan memberikan metode yang jauh lebih efisien untuk back-up data, lampiran e-mail, atau download data dari sebuah situs web. .

Buatlah sebuah *Data Frame* baru dan sebut sebagai **Jakarta City** (Pilih menu **Insert | Data Frame** dan klik-kanan pada nama *Data Frame*, pilih **Properties** dan ubah **Name: field.**)

## 10.2 Mengimpor data GPS dengan *ArcCatalog*

GPS (Global Positioning System) adalah kumpulan dari 27 satelit NAVSTAR yang mengorbit bumi. Sinyal dari satelit ini dapat dikumpulkan oleh penerima GPS untuk menentukan posisi 3D penerima. Penerima perangkat genggam termurah dapat mengumpulkan data lebih baik dari akurasi 10m. High-end penerima, dikombinasikan dengan Differential GPS (kombinasi penerima roaming dan penerima tetap di lokasi yang diketahui) dapat meningkatkan akurasi untuk tingkat sub-meter.

File **gps\_pts.txt** juga terekstrak dari file zip ke '**Local Drive**':**giscourse** mengandung titik-titik co-ordinates yang dikumpulkan oleh GPS dari Science Site. Data ini akan dimasukkan kedalam *ArcMap* ke data overlay Land-Line.

Untuk menampilkan **gps\_pts.txt** pertama kita harus mengimpor data dengan menggunakan *ArcCatalog*:

1. Start *ArcCatalog* jika belum beroperasi.
2. Arahkan ke '**Local Drive**':**giscourse**, dan double-klik pada **gps\_pts.txt** untuk menampilkan file di Notepad. (Pastikan tab**Contents** terpilih di kanan panel). Jika file tidak tampak pilih menu **View | Refresh**.

**gps\_pts.txt** hanyalah sebuah file teks yang berisi daftar yang dipisahkan koma tentang nilai lintang, bujur, ketinggian dan waktu. .

3. Tutup Notepad.
4. pada *ArcCatalog* klik-kanan pada **gps\_pts.txt** dan pilih **Create Feature Class | From XY Table**.
5. Pastikan **X Field:** ter-set pada **Longitude**, dan **Y Field:** ter-set pada **Latitude**
6. Titik-titik GPS adalah pada koordinat latitude/longitude. Ini harus secara spesifik sehingga terimpor dengan benar:

Klik tombol **Spatial Reference of Input Coordinates** , klik **Select**, double-klik **Geographic Coordinate Systems | World** dan pilih **WGS 1984.prj**. Klik **Add** lalu **OK**.

7. Pada bagian **Output** dibawah, pastikan Output Shapefile ter-set pada:

**J:giscourse/XYgps\_pts.shp** lalu klik **Advanced Geometry Options**.

Untuk mendapatkan titik GPS untuk overlay data yang telah ada di data frame **Jakarta City**, proyeksi harus sesuai. Saat ini data *gps\_pts.txt* berada di lintang / bujur - harus dikonversi ke *Ordnance Survey Great Britain* untuk mencocokkan. Untuk melakukan ini pilihan output berikut harus diset: :

8. Klik **Edit | Select | Projected Coordinate Systems | National Grids | Indonesia IDGN 1995 Indonesia TM-3 Zone 48.2**, Lalu **Add**, lalu **OK**, kemudian **OK**.
9. Terakhir, klik **OK** untuk mengimpor ke convert *gps\_pts.txt*.
10. Setelah komplit, ke *ArcMap* dan tambahkan **J:giscourse\XYgps\_pts.shp** pada data frame **Jakarta City**.

Titik-titik GPS akan muncul overlain pada University science site.

11. Sebelum menyelesaikan sesi ini, simpan dokumen peta dengan menu **File | Save** dan tutup *ArcMap* dengan menggunakan **File | Exit**.

## 11 Raster data

Data yang digunakan sejauh ini merupakan data vektor (contoh: titik, garis, atau polygon *features*). Tipe data penting lainnya yang digunakan di dalam GIS adalah *Raster Data*.

Dimana, *features* dipecah menjadi sel atau pixel individu. File *Raster* dapat menjadi besar, tetapi memberikan cakupan yang luas untuk pilihan analisa.

Seksi berikut akan menjelaskan proses untuk merubah data vektor menjadi *raster*, dan melakukan analisa terhadap data tersebut.

### 11.1 Menambahkan vektor data elevasi

1. Mulai lagi *ArcMap*, tetapi jangan membuka map dokumen yang telah disimpan sebelumnya (*practical1.mxd*). Gunakan dokumen kosong standar (*default*) yang diperlihatkan di *start-up*.
2. Dalam *ArcMap*, ubah nama data *frame Layers* standar (*default*) menjadi ***Raster Analysis*** (klik sekali pada label ***Layers***, lalu klik sekali lagi untuk mengedit labelnya).



3. Klik tombol **Add** Data.
4. Navigasi ke **GIS | Database** dan sorot (*Highlight*) **elevation.shp**. Klik **Add**.

### 11.2 Menggunakan *Spatial Analyst*

Fungsi lanjutan dalam *ArcMap* disediakan di *Extension*, dan salah satunya adalah *Spatial Analyst*.

*ArcMap* akan menampilkan data *Raster*, tetapi *Spatial Analyst* harus digunakan untuk pemodelan dan menganalisa data *Raster*. Pertama-tama kita akan menggunakannya untuk merubah **elevation** vektor data menjadi bentuk *Raster*.

Ekstensi (*Extension*) harus dinyalakan dengan menambahkan *menu* bar baru ke jendela *ArcMap*:

1. Nyalakan *Spatial Analyst* dengan menandai judulnya di **Tools | Extensions** lalu nyalakan menunya dengan memilih **View | Toolbars** dan klik judul ***Spatial Analyst*** dengan mouse kiri
2. Menu *Spatial Analyst* muncul di jendela *ArcMap*.

### 11.3 Mengubah data vektor menjadi *Raster*

Untuk mengubah **elevation** data vektor menjadi bentuk *raster*:

1. Dari *menu bar Spatial Analyst* pilih ***Spatial Analyst | Convert | Features to Raster***.

2. Dalam kotak dialog *Features to Raster* pastikan untuk memasukan *Input Features*: diset ke *elevation*, *Field*: diset ke *Elevation (NOT Geology\_)* dan *Output Raster*: diset ke '*Local Drive*':*/giscourse/Jakarta\_dem*

3. Klik OK.

Saat pengubahan vektor menjadi *raster* telah selesai data *raster* baru **Jakarta\_dem** akan muncul di dalam *Data Frame Raster Analysis*. Matikan terlebih dahulu layer vektor *elevation* karena akan mengganggu *layer* di bawahnya. ArcGIS *Raster data* adalah dalam bentuk (*format*) GRID.

Navigasi sekitar **Jakarta\_dem** dan gunakan *Identify tool* untuk menanyakan (*query*) nilai sel (*cell values*). Data tersebut akan memuat atribut geologi yang sama dengan (ekuivalen) data vektor. *Zoom* ke dalam data untuk melihat *pixel* sel individu (*individual cell*).

#### 11.4 Digital Elevation Model — raster data

A *Digital Elevation Model (DEM)* adalah representasi raster dari data ketinggian. Dalam contoh disini ketinggian adalah ketinggian di atas permukaan laut.

Tambahkan DEM dari *upper tahoe* ke *Data Frame* memuat data geologi:

1. Klik tombol **Add Data**.
2. Navigasi ke **T:/its/gis**, sorot (*highlight*) **tahoe\_dem** dan klik **Add**. Matikan **Jakarta\_dem** jika ini mengganggu **tahoe\_dem**.

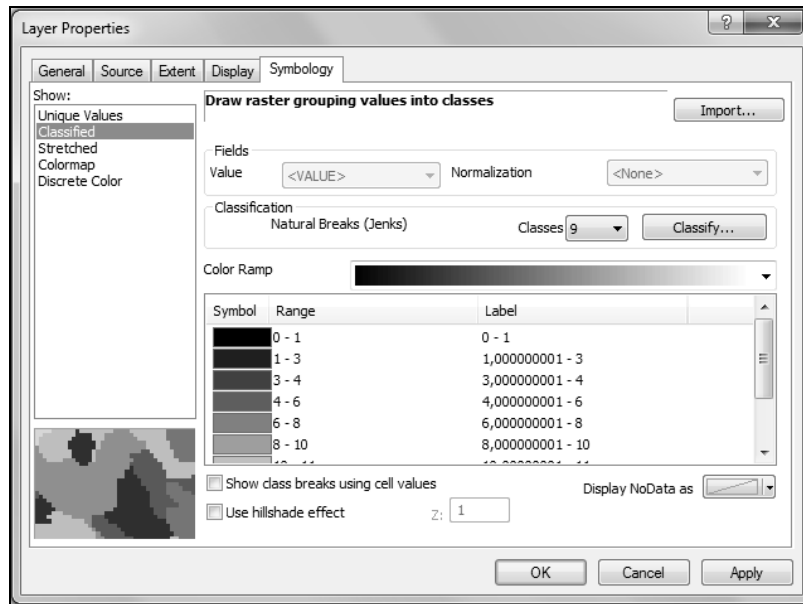
ArcMap secara otomatis menetapkan skema bentang warna bertingkat ke **tahoe\_dem**

Navigasi disekitar **tahoe\_dem** dan gunakan *identity tool* untuk menanyakan (*query*) nilai dari *grid* sel (*grid cell values*). Nilai tersebut adalah *Feet* dari atas permukaan laut.

#### 11.5 Mengubah klasifikasi dari raster data

bentang warna bertingkat yang secara otomatis ditetapkan oleh ArcMap tidak selalu sesuai. Hal ini dapat dirubah menggunakan *Layer Properties*:

1. Buka *Layer Properties* dialog untuk **tahoe\_dem** *layer* dengan double-klik judulnya di TOC.
2. Pastikan *Symbology tab* telah terpilih. Untuk merubahnya menjadi skema yang digolongkan, klik *Classified* pada sisi kiri dan ubah *Classes*: menjadi 9:



Warna yang digunakan dapat dirubah dari **Color Ramp**: *drop-down menu*.

Nilai individu yang digunakan oleh setiap kelas dapat dirubah dengan mengklik tombol **Classify** dan merubah Nilai **Break** pada setiap kelas.

3. Klik **OK** untuk menerima perubahan.

### 11.6 Membuat Peta Lereng (Slope Map)

Menggunakan DEM, mudah untuk membuat *raster* menunjukkan *slope*:

1. Dari *Spatial Analyst* menu pastikan **Layer:** diset ke **tahoe\_dem** dan pilih menu **Spatial Analyst | Surface Analysis | Slope**.
2. Klik **OK** pada kotak dialog **Slope**.

Sebuah *slope layer* bernama **Slope of tahoe\_dem** terbuat, dengan nilai *slope* dalam derajat.

### 11.7 Mengintegrasikan Raster data

Sekarang dimungkinkan untuk menggunakan **Slope of tahoe\_dem** dan **Jakarta\_dem** layers bersama-sama untuk melaksanakan analisis kecocokan (*suitability analysis*).

Imajinasikan skenario dimana data tersebut dapat digunakan untuk mencari lokasi yang cocok untuk meletakkan batuan granite. Kita harus mencari area dari *Cretaceous intrusives* (contoh: Granite) dimana berada pada tanah yang cukup datar. Jadi, dari *slope layer* kita harus memilih area yang mempunyai *slope* kurang dari  $3^{\circ}$ , dan dari **Jakarta\_dem** layer kita ingin untuk memilih area yang mengandung *Cretaceous intrusives* sebaga permukaan geologi.

Menggunakan fungsi *Spatial Analyst* kita dapat menggabungkan kondisi tersebut dari kedua layers untuk membuat kecocokan dalam peta (*suitability map*):

1. Pilih **Spatial Analyst | Raster Calculator** dari menu.
2. Gunakan judul **Layers** dan tombol untuk meletakkan formula berikut ke dalam kotak pertanyaan (*query box*) pada dasar dari kotak dialog:



### [Slope of tahoe\_dem] < 3 & [Jakarta\_dem] == 1

Nilai 1 dari Jakarta\_dem sesuai dengan *Cretaceous intrusives* (granite).

3. Pilih *Evaluate*.

Hasil dari layer *Calculation* menampilkan lokasi dimana slope kurang dari 3 derajat dan keberadaan granite. Kalkulasi diberi kode 0 = false, and 1 = True (contoh: cocok – kriteria terpenuhi dengan granite berlokasi di area dengan slope < 3)

Untuk melihat *layers* dibawah *calculation* double-klik judulnya di dalam TOC dan di bawah *Display* tab set transparansi menjadi 30 %.

*Calculation* tidak permanen dan akan secara otomatis terhapus saat ArcMap ditutup. Untuk membuat kalkulasi menjadi permanen simpan di J:drive dan beri nama *suitability*:

1. Klik-kanan pada *Calculation* dan pilih *Make Permanent*.
2. Navigasi ke J:\giscourse dan masukan *suitability* pada **Name:** field.
3. Klik **Save**.
4. Layer ini dapat dinamai ulang pada TOC – klik sekali pada tabel Calculaton dalam TOC dan klik sekali lagi untuk mengedit – namai ulang Suitability.

Tiga kriteria tersebut mungkin tidak cukup untuk membuat dasar keputusan. Analisis lebih jauh dapat dimasukan dengan mengkombinasi informasi, contohnya, area lindung dimana penggalian tidak diizinkan atau kemudahan akses jalan.

Sebelum memulai seksi berikutnya simpan dokumen peta pada **j:\giscourse\Rasterdata.mxd**.

## 12 Menghasilkan output terakhir — *The Layout View*

Layer *suitability* yang dihasilkan dari seksi sebelumnya sekarang akan digunakan untuk membuat presentasi-*quality* layout siap untuk dicetak.

### 12.1 Membuat sebuah Layout

Meskipun printing dapat dilakukan secara langsung dari *Data View*, untuk output dari peta terakhir, direkomendasikan *Layout View*. *Layout View* digunakan untuk menampilkan peta bersama dengan panah utara, batang skala, legend, grafik, teks penjelasan, dan yang lainnya.

Membuat dan mencetak *Layout View* dari *Suitability Layer*:

1. Pertama, hilangkan semua layer kecuali *suitability* dari *Raster Analysis data frame*. Untuk melakukannya klik-kanan pada setiap layer dalam TOC, dan pilih **Remove**.
2. Pilih *Layout View* dari ikon pada bagian bawah kiri dari peta:



Sebagai standar (*default*) garis yang rapi ditambahkan di sekitar peta. Set *Data Frame* unit ke meter sehingga batang skala menjadi benar:

1. Pilih menu *View | Data Frame Properties*.
2. Pada *General tab* dibawah *Units* set kedua peta: dan *Display:* ke Meter.

3. Klik OK.
4. Pilih menu *Insert* | *Scale Bar*, pilih *Properties* dan set *Division Units* ke Meter.
5. Klik OK dan OK lagi.
6. Masukkan judul, legend, dan panah utara dari menu *insert*.
7. Pindahkan elemen ke tempat yang sesuai pada peta dengan mengklik dan menyeretnya dengan mouse.
8. Terakhir, masukan kota teks dan masukan sebuah *copyright note*:

Saat menggunakan data, sangat penting untuk mengakui pemegang hak cipta. Dalam kasus ini, peta telah dibuat dari ESRI data, sehingga *note* harus tertulis:

### **Copyright ESRI**

## **12.2 Mencetak Peta**

Mencetak dari ArcMap relatif mudah:

1. Untuk mencetak peta, pilih **File** | **Print** dari menu bar.
2. Standar printer adalah **Self Service black and white laser printer**. Jika ini tidak cocok, pilih **Setup** dan pilih printer dari *drop-down* list dibawah **Name**:
3. Klik OK dan OK lagi untuk mencetak.

Ada rentang dari printer yang tersedia, termasuk A4, A3, dan A0 Hitam & Putih dan Warna – untuk list semuanya dapat dilihat pada: [www.dur.ac.uk/its/services/printing/](http://www.dur.ac.uk/its/services/printing/)

## **13 Mengeksport peta untuk digunakan di aplikasi lainnya**

Peta umumnya ditempatkan pada aplikasi lainnya, contoh: *Microsoft Word* dokumen atau dimasukan di dalam *web page*.

Untuk mengeksport peta pilih **File** | **Export Map** dan pilih **JPEG** atau format lainnya sebagai **Save as type**. Masukan **Name File** dan klik **Save**.

Untuk menggunakan file JPEG di dalam *Microsoft Word*, pilih **Insert** | **Picture** | **From File**, pilih JPEG file dan klik **Insert**.

Untuk menempelkan Layout ke dalam *Word* sorot (*Highlight*) layout di dalam ArcMap, pilih **Edit** | **Copy**, buka *Word* dan pilih **Edit** | **Paste**.

Terakhir, simpan dokumen peta (**rasterdata.mxd**) dan pilih **File** | **New** dari menu untuk membuat dokumen kosong.

## **14 ArcToolbox**

*ArcToolbox* menyediakan akses ke fungsi *geoprocessing* lanjutan dan akan digunakan disini untuk merubah data

vektor.

Nyalakan jendela *ArcToolbox* dengan memilih **Window | ArcToolbox**.

#### 14.1 Dissolve

Contoh berikut menunjukkan cara untuk mendissolve polygon data berdasarkan atribut. Datanya adalah *regions of France* yang akan didissolve untuk membuat batas Negara:

1. Masukkan **T:/its/gis/geoprocessing\_data/Level\_1\_Provinces/France\_regions**
2. Dari *ArcToolbox* pilih **Data Management Tools | Generalization | Dissolve**.
3. Klik **Show Help** untuk mengerti kegunaan *Dissolve*.
4. Pilih **France\_regions** dari *drop-down box* di bawah *Input features*.
5. Di bawah **Output Feature Class** masukkan **J:\giscourse\France\_dissolve.shp**.
6. Tandai atribut yang benar di bawah **Dissolve field(s)** (keterangan: atribut yang akan didissolve yang adalah CNTRYABBR). Atribut ini akan menjadi sama untuk setiap daerah contoh: nama Negara, France.
7. Klik **OK**.

Setelah *dissolve* selesai hasil file dapat ditambahkan ke ArcMap. Lihat akan apa yang telah terjadi. Juga lihat pada CNTRYABBR dalam tabel atribut dari data aslinya untuk mengerti apa yang telah dilakukan oleh *Dissolve*.

#### 14.2 Clip

Seringkali data mencakup area lebih besar dari yang dibutuhkan, sehingga dapat memperlambat analisis dan ukuran filenya menjadi terlalu besar. *Clip* memperbolehkan data untuk di 'cookie-cut' ke area study yang dibutuhkan. Berikut akan ditunjukkan bagaimana cara untuk melakukan *clip out* pada sebuah area dari data yang dibuat pada contoh terakhir.

1. Hilangkan semua layer yang aktif dari *data frame* kecuali *layer* yang telah didissolve.
2. Masukkan **T:/its/gis/geoprocessing\_data/Level\_1\_Provinces/study\_area**
3. Layer baru ini adalah polygon yang mendefinisikan batas dari area studi hipotetis.
4. Pilih **ArcToolbox | Analysis Tools | Extract | Clip**.
5. **Show Help** mendeskripsikan *Clip Tool*.
6. Pilih **France\_dissolve layer** di bawah *Input Features*.
7. Pilih **study\_area** sebagai poligon *clip layer* di bawah *Clip Features*.
8. Masukkan nama **Output Feature Class**.
9. Klik **OK**.

Matikan *study\_area* dan *France\_dissolve* untuk melihat hasil dari *Clip*.

### 14.3 Union

Union akan menggabungkan beberapa *layer* menjadi satu. Contoh berikut akan menunjukkan cara untuk menggabungkan dua *layers*; satu mengandung batas Negara dari Norway, dan yang satu lagi adalah dari Sweden:

1. Buat *Data Frame* yang baru dan masukan  
**:/its/gis/geoprocessing\_data/countries/norway and sweden.**
2. Pilih **ArcToolbox | Analysis Tools | Overlay | Union.**
3. Pilih **View Help** untuk penjelasan mengenai *Union*.
4. Pilih norway dan Sweden secara bergiliran pada **Input features.**
5. Pilih **Output feature Class** ke **c:/temp/norswe.shp**. Jangan disimpan ke J:¥ drive oleh karena file yang dihasilkan terlalu besar. Catatan: semua files di dalam c:/temp dihapus saat log off dari mesin NPCCS.
6. Klik **OK**.
7. *Layers* gabungan yang baru akan ditambahkan di dalam peta.
8. Matikan existing norway dan sweden *layers* dan pastikan bahwa
9. *Union* bekerja dengan benar di file yang baru.

Lihat pada *Index tab* pada bagian bawah dari jendela *ArcToolbox* untuk melihat perintah lainnya, contoh: *Intersect* dan *Merge*.

***Training Text for CAD Conversion Course (English)***

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## **1 Introduction**

### **1.1 Purpose**

All spatial data, or digital map data of any kind, developed by or for the Project should meet certain specification. This document describes a step-by-step process for clean and accurate conversions of Computer Aided Drafting (CAD) ".dwg" files to Geographic Information System (GIS) shapefiles ".shp".

Attendee shall discuss about data management issues such as followings.

Specification for Original (CAD) Data

SOP for Data Processing (Procedure for mandating GIS Database)

### **1.2 Need for the CAD-GIS Conversion Guide**

With the growing popularity of GIS and the increasing availability of a wide range of datasets, GIS is becoming a common tool for all disciplines of the Administrative Service. In urban management area specifically, GIS can be a useful tool for analysis of changes, and can help managers and the public visualize the consequences of proposed management actions.

Currently common GIS Database for DKI Jakarta area does not exist. What usually is available, however, is a collection of project-oriented construction drawings from previous projects at the site (sometimes referred to as "legacy" data). Or topographical map based on a ground survey done by a certified professional surveyor on CAD Data.

By turning these CAD drawings into GIS data, the full functionality of GIS can be used to analyze and compare the data from the CAD drawing with other GIS data. There are alternative ways to work with CAD data in GIS. This document focuses on the most robust and long-term solution for CAD data conversion. At the completion of this process the final output files are in a GIS format and fully usable in all GIS operations.

Recent advances in GIS software have made it easier to transfer CAD drawings into GIS shapefiles or geodatabase, but many quirks still exist in file transfer due to the inherent differences in the file formats. In this document, it will describe a step-by-step method of transfer, noted issues in both the CAD and GIS to be aware of when attempting to convert CAD data into GIS format in possible scenario.

### **1.3 Primary Issues with CAD-GIS conversion**

CAD drawings and GIS data are created for different purposes, and as a result the softwares' data models are inherently different, and the files differ in their construction and attributes. These issues will be addressed in step-by-step guide for CAD-GIS conversion.



### **1.3.1 Drawings vs. Spatial Databases**

CAD drawings are simply that - drawings - and contain no additional attributes. All CAD drawing elements are either points, lines, or polylines (made up of a continuous string of lines). A CAD drawing element contains only the information needed to draw itself - lineweight (thickness), linetype (continuous, dotted, dashed), color, and the layer (explained below) to which it is assigned. GIS, on the other hand, has an additional functionality. Its features can hold enormous amounts of data describing the features (that is, a polygon representing a house could contain information about the owner, street address, numbers of bathrooms, bedrooms, etc). Also, GIS data is "spatially informed" regarding adjacency and other spatial relationships. Simply put, CAD is a drawing, and GIS is a spatial database.

### **1.3.2 CAD Layers**

CAD features are organized by layers, which can contain points, lines, polygons, and annotation (as compared with a GIS shapefile, which can only contain one feature type). Each drawing feature belongs to a specific layer. In this way, elements of similar type can be viewed, hidden, frozen, moved, and edited together. An example is a layer named "TREE" that contains all the elements representing trees in the CAD file. When a CAD drawing is exported to a GIS shapefile, the CAD drawing's layers become a field in the GIS shapefile's attribute table. New point, line, and polygon shapefiles can then be extracted based on each layer (trees, buildings, roads, etc).

Since there is no accepted naming convention for CAD layers and restrictions on the length of layer names, its often difficult for a new user to decode a CAD layer name. For example, the layer name LA-TR-DE could mean a deciduous tree under the category "landscape". Another difficulty is many CAD drawings contain layers that are not sufficiently "clean", meaning stray pieces of lines or points that belong to one layer could appear on a completely unrelated other layer, or remnants of lines or points used in the development of the drawing but not representative of actual features could remain (trim lines, transit points, etc). These inconsistencies are not of major concern in the CAD realm, but in GIS it introduces inaccuracies and can corrupt the database.

### **1.3.3 Coordinate Systems**

CAD drawings are usually much more accurate to a large scale than GIS data, but often use different coordinate systems than GIS. For most GIS data, the standard coordinate system and datum is Universal Transverse Mercator (UTM) NAD 83 or TM-3, DGN 1997 whereas the standard CAD survey coordinate system is TM-3. Sometimes a CAD drawing will have no recognizable coordinate system, which usually means the drawing uses an arbitrary, locally

established point of origin (0,0). Using ArcGIS, the CAD data can be reproject it into a new coordinate system or, if there is no known coordinate system, the CAD data can be aligned manually, by spatial adjustment. Identifying a CAD drawing's coordinate system is very important for a clean transfer to GIS.

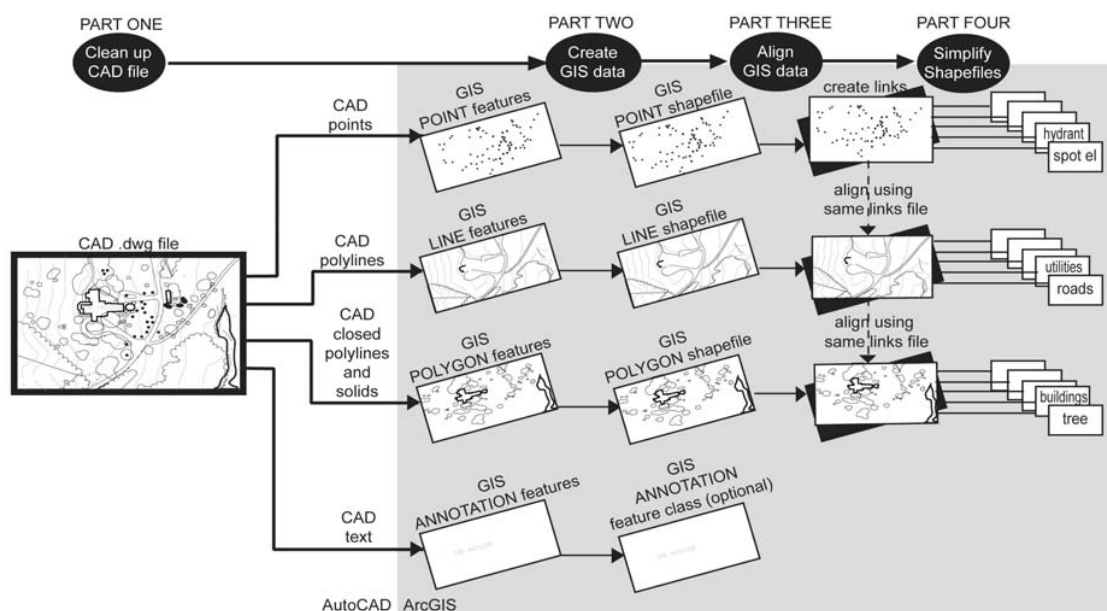
### 1.3.4 Documentation

Since CAD drawings are only drawings, it is often difficult to determine the author, purpose, sources, extents, accuracy, and other important information about the drawing. Creating complete documentation on a CAD drawing's purpose and technical history will help sustainable development of GIS database. This information shall be major components of the Spatial Data Specifications. Undocumented data cannot be shared, distributed, or considered and treated as part of the database.

### 1.4 Creating GIS Shapefiles from CAD layers

When a CAD drawing is imported into GIS, the GIS will interpret all elements into the four categories of GIS features: points, lines, polygons, and annotation (text). Typically it will be desirable to further divide these shapefiles based on the original CAD layers. For example, three separate shapefiles could be created from the three CAD layers Trees, Roads, and Buildings.

The following flow chart illustrates the methodology used in this step-by-step guide.



## **2 Preparing CAD files for GIS Conversion**

This section shall explain preparation for CAD files for GIS conversion.

### **2.1 CAD Software**

Preparing own check list for data conversion is important.

### **2.2 Cleaning up CAD drawings for GIS**

This section will ensure that the CAD file is properly documented and in the best shape to be transferred to GIS. The procedure assumed that all of the information related to drawing (CAD file) is available. CAD commands are noted in **ITALIC UPPER CASE**. See the AutoCAD Help menu for more Information.

- Turn on and Zoom out
  
- Record Drawing Information and Begin Metadata Documentation
  
- Rename CAD File
  
- Determine Your Data Needs
  
- Erase Unwanted Elements
  
- Rename CAD Layers
  
- Clean CAD Layers
  
- Determine CAD Coordinate System

#### **2.2.1 TURN ON AND ZOOM OUT**

Before you begin, be sure that all layers are turned on and the entire drawing extents are viewable.

To turn all layers on: click the Layers button. In the Layers Properties Manager box, beside each layer, a lightbulb icon will identify whether a layer is turned ON or OFF. Click any dark lightbulb (layer OFF) to make it yellow (layer ON).

To zoom to the drawing extents: Command Line: **ZOOM <enter>**, Extents <enter>

#### **2.2.2 RECORD DRAWING INFORMATION**

Record all information available regarding the drawing's author, technician, source, name, scale, date, surveyor, coordinates, extents, layer names and descriptions, horizontal level of accuracy,

etc. This information should then be recorded in the subsequent GIS shapefile's metadata document, following Federal Geographic Data Committee (FGDC) guidelines. Much of this information may be shown in the drawing's titleblock or notes. Contacting the creator and/or surveyor of the drawing will also yield good information. Also note any missing information.

### **2.2.3 RENAME CAD FILE**

Save the file under a new name before editing, so the original is not modified.

### **2.2.4 DETERMINE YOUR DATA NEEDS**

Depending on project needs, it may or may not be desirable to transfer the entire CAD drawing to GIS. If there is interest only in a few layers of CAD data (trees, roads, buildings, for example), and the remaining

CAD data does not need to convert to GIS, use the following method. Select only the layers you wish to transfer to GIS, and copy them into a new CAD drawing to be taken into GIS. By selecting only the elements on these layers and copying them to a new drawing, all unnecessary drawing elements will be left behind. Follow the steps below precisely, otherwise significant errors may result.

Procedure:

1. Isolate a desired layer. The Express Tools extension will isolate the one layer. Lacking this extension, click the Layers button. Right click any layer and choose Select All layers. Click the lightbulb icon next to a layer name to turn OFF all layers. Turn back ON the layer to be isolated. Now only the selected layer is shown.
2. Under the Edit pulldown menu, choose Copy with Base Point.
3. Specify a base point of 0,0.
4. Select all objects to be copied and press <enter>.
5. Paste into the new drawing, specifying an insertion point of 0,0.

Repeat these steps for each layer you wish to transfer to GIS.

These steps will result in a new drawing composed of only the elements and layers chosen for GIS transfer. Use this new drawing to convert the CAD data to GIS.

### **2.2.5 ERASE UNWANTED ELEMENTS**

Using the *ERASE* command, delete all unwanted drawing elements - titleblocks, borders, legends, etc. Only the pertinent drawing elements to be transferred to the GIS database should

remain. Note: information in the titleblock and/or legends may be essential to record in the subsequent shapefile's metadata. Keep good records.

Command line: *ERASE*, <select objects>, <enter>.

#### **2.2.6 RENAME CAD LAYERS**

Many times CAD developers will code their layer names in a way that makes them difficult to decipher. Rename layers in CAD as needed for clarification. Click the **Layers** button. Slowly double-click the layer name and type a new name.

#### **2.2.7 CLEAN CAD LAYERS**

Before transferring the CAD drawing to GIS, verify that all features are on their respective layers. Isolate each layer by turning all other layers OFF and see that there are no stray drawing elements or features that belong on other layers (see Step 4). *ERASE* those elements that do not belong on the layer, or cut and paste them into their proper layer. Repeat for all the layers in the drawing.

(Note: Layer 0 and "defpoints" are inherent in all CAD drawings. These layers cannot be deleted, but should contain no objects.)

#### **2.2.8 DETERMINE CAD COORDINATE SYSTEM**

Many CAD drawings, especially survey drawings, are drawn to a real-world coordinate system that GIS will recognize. When a CAD drawing is drawn to a standard coordinate system (State Plane, for instance), it can be *reprojected* in GIS for proper alignment with other GIS data. If the drawing has no standard coordinate system, it must be *spatially adjusted* in GIS to align with other data. Spatial adjustment is usually less accurate than reprojecting.

The CAD file's coordinate system may be noted on the drawing itself, in the titleblock, in the drawing notes, or on a layer showing a GPS point of origin. If there is no information on the coordinate system and datum from the drawing or the creators, compare drawing coordinates in CAD with GIS coordinates of the same area using a georeferenced orthophoto or other dataset. You will need this information to correctly align the data within GIS.




## **3 Creating GIS data from CAD files**

### **3.1 Begin Metadata Documentation**

Record all information available regarding the CAD drawing's author, technician, source, name, scale, date, surveyor, coordinates, extents, layer names and descriptions, horizontal level of accuracy, etc. This information should then be recorded in the subsequent GIS shapefile's metadata document, following Federal Geographic Data Committee (FGDC) guidelines. Much of this information may be shown in the drawing's title-block or notes. Contacting the creator and/or surveyor of the drawing will also yield good information. Also note any missing information.

### **3.2 Add CAD files to a Dataview**

CAD drawings can be immediately displayed in ArcGIS. This step does not create GIS data, it only displays CAD data in the GIS dataview.

In ArcMap, add the CAD .dwg file to be converted, using the **Add Data** button.  When browsing for the CAD file, two files of the same name will appear. The first, displayed as a light-blue icon,  is a "CAD feature data set", which will convert the CAD file into point, polyline, polygon, and annotation objects (Polygons are created from CAD's closed polylines. Annotation is created from CAD text). The second, displayed as a white icon, is  the simple CAD line drawing. In this file, text and polygons will read as linework only, and there will be no associated attributes for any objects. To convert CAD files into ArcGIS data (shapefiles or other), choose the first file (light-blue icon). Set" file (light blue icon) for each object. These fields will now be visible in the layer's attribute table.

### **3.3 Export CAD data as Shapefiles**

When the blue CAD file is added to ArcMap, the file will be divided into data sets, based on the four types of GIS data: point, line, polygon, and annotation. Shapefiles can be created from the point, line, and polygon datasets. The annotation set cannot be exported as a shapefile. Annotation must be exported as a feature class of a geo- database (see Appendix B).

Right click on each data set and choose Data►Export Data. Export as separate shapefiles. Remember, the resulting shapefiles will not yet have a defined coordinate system in GIS. Choose the default option "Use the same Coordinate System as this layer's source data."

## **4 Aligning Data in GIS**

In order for newly created shapefiles to align properly with other GIS data, they need to have a coordinate system/projection defined in GIS. In general, standard coordinate system for GIS in Indonesia is Universal Transverse Mercator (UTM) and the standard datum for WGS84.

To determine if a shapefile has a defined coordinate system, check the original CAD drawing notes, compare coordinates of an identical spot in CAD and GIS, and/or check with the CAD drawing developer (see Part One, Step 8).

Another method to determine the coordinate system: add a shapefile to a blank ArcMap document and right-click on the shapefile name. Select "Properties" under the context menu and click on the "Source" tab. Check here to see if a coordinate system has been defined.

If the shapefile's coordinate system is UTM WGS84, there is nothing more to do, it is projected correctly. Otherwise, there are three possible procedures:

- If it lists a coordinate system other than UTM NAD83, the shapefile must be reprojected to UTM WGS84 using ArcToolbox's Project Wizard (Procedure 2).
- If it has an undefined projection, it must be defined as UTM NAD83 using ArcToolbox's Define Projection Wizard (Procedure 1) and then spatially adjusted to align properly, using ArcMap's Spatial Adjustment extension (Procedure 3).
- In some cases, the original CAD drawing was created using a defined coordinate system but ArcGIS is not recognizing it. In this case the projection must be defined as such using ArcToolbox's Define Projection Wizard (Procedure 1) and then the shapefile reprojected to UTM NAD83 using ArcToolbox's Project Wizard (Procedure 2).

### **4.1 Defining the Projection**

Use this procedure if the original CAD drawing was created using a defined coordinate system, but ArcGIS is not recognizing it.

To define a shapefile's coordinate system, open ArcToolbox and select the Define Projection Wizard (under Data Management Tools > Projection) for shapefiles. Follow the directions of the Wizard to define the coordinate system interactively. Select the projection and specify its parameters. Browse to the input shapefile.

Enter in the original coordinate system the CAD drawing was created in. Next, use the Project Wizard to reproject the shapefile from its current coordinate system to UTM NAD83 (Procedure 2).

If you have no knowledge of the CAD drawings coordinate system, choose UTM NAD83 and spatially adjust the shapefile (Procedure 3).

## **4.2 Reprojecting Shapefiles**

Use this procedure when the coordinate system of the shapefile has been defined, but is not match with coordinating system which you apply for the gisdatabase. Using the Project Wizard in ArcToolbox (see illustration on Page 17), project the data to UTM WGS84. Be sure to specify WGS84 and the appropriate UTM zone for your place. Finally, specify a shapefile name for the newly projected shapefile. FGDC compliant metadata can now be written for the shapefile and these data can be used in your GIS.

## **4.3 Spatially Adjusting Shapefiles in ArcGIS**

Use this procedure when the shapefile's coordinate system has been defined in GIS but the data is not aligning properly with other data. This process will move a shapefile from its current coordinates to the correct coordinates by aligning control points in the shapefile with identical control points from a correctly projected orthoimage or other dataset of the same geographic area.

Before spatially adjusting the shapefile, its projection must be defined as UTM NAD83. Follow the instructions in Procedure 1 to define the projection, and then continue.

- Be sure the Spatial Adjustment extension is loaded in ArcMap.
  
- In a blank ArcMap project, open a correctly georeferenced orthoimage or other dataset suitable for serving as a planimetric base for georeferencing the newly created shapefiles. Be sure it is projected to UTM NAD83. There should be common elements visible in both the CAD shapefiles and the orthoimage (corners of building, edge of road, manholes, etc). These common elements will act as the control points for adjustment. Make sure both the Editor and Spatial Adjustment toolbars are visible. Check to make sure that the data frame is in the correct projection (UTM NAD83, in the correct zone for the project).
  
- Add one of the shapefiles created from the CAD drawing, preferably the polyline or line shapefile. This file type is preferred because it often has the best features that can act as control points (for example, street intersections and building corners). Click "Start Editing" on the Editor toolbar and choose the proper folder that contains the shapefile you wish to adjust. Under the Spatial Adjustment pulldown menu, select "Set Adjust Data", check the layer to be adjusted, and select "All Features in These Layers."



- On the Spatial Adjustment toolbar, use the New Displacement Link button to insert displacement links connecting common features from the shapefile to the target orthophoto (or other dataset).
  - First, click the New Displacement Link button to activate the process.
  - Next, click a strategic spot on the shapefile
  - The next click should be the identical spot on the target orthophoto.
  - Repeat this process, inserting links as evenly as possible throughout the drawing.
- When satisfied that enough links have been established, click the Spatial Adjustment toolbar and select LinksJ Save Links File. In this way identical links can be applied to the remaining shapefiles from the CAD drawing.
- Under the Spatial Adjustment pulldown menu, choose an “Adjustment Method”. When possible, select the “Similarity” transformation. This method maintains the aspect ratio because it does not differentially scale or skew your data. If this algorithm does not perform well, select the “Affine” transformation. However, the Affine transformation will differentially scale, skew, rotate, and translate data. The remaining adjustment methods are often too aggressive to be useful for CAD data adjustments.
- Now the spatial adjustment can be executed. Select Adjust from the Spatial Adjustment pulldown menu to move the shapefile to its new location and complete the spatial adjustment. If the links do not result in a satisfactory match with the orthophotos, click Undo from the Edit pulldown menu and repeat Steps 5 and 6, deleting links with high residual errors and/or adding new links in certain areas.
- When a satisfactory match has been achieved, select “Stop Editing” from the Editor toolbar and save edits when prompted. The shapefile is now properly aligned with other UTM NAD83 data! Remember to save your links again if you have changed them. Record your overall RMS/residual error and Adjustment Method to include in your metadata later.

Spatially adjusting the remaining shapefiles

The remaining shapefiles created from CAD data can now be spatially adjusted by using the same displacement links created for the first shapefile

- Add the remaining shapefiles to be adjusted to the Dataview.
- Repeat Steps 3 and 4 from the previous section (“Start Editing” and “Set Adjust Data”).  
In the Set Adjust Data dialog box, make sure that all of the shapefiles that are to be adjusted are selected.
- Under the Spatial Adjustment pulldown menu, click Links and choose Open Links File.  
Select the links file created from the previous shapefile adjustment.
- Under the Spatial Adjustment pulldown menu, choose the same “Adjustment Method” used for the first shapefile.
- Select “Adjust” on the Spatial Adjustment pulldown menu. Select “Stop Editing” from the Editor toolbar and save edits when prompted. All of the CAD shapefiles are now aligned with other UTM NAD83 data!

## **5 Simplifying shapefiles**

### **5.1 Creating New Shapefiles From CAD Layer Names**

When a CAD drawing is converted to a GIS shapefile, the original CAD layers become a field in the shapefile’s attribute table (see Introduction and Part One for more information on CAD layers). By selecting objects in the shapefile based on their CAD layer names, and exporting them as new shapefiles, shapefiles can be created for each original CAD layer. Therefore, this procedure can yield separate shapefiles for grouped objects (trees, buildings, roads, etc) which can then be integrated more effectively into a GIS database.

#### **5.1.1 Select Feature by Attributes and Convert**

In ArcMap, with the shapefile loaded, choose “Select By Attributes” from the Selection pulldown menu.

In the Select by Attributes box, choose the target shapefile you wish to convert, and “create a new selection” based on the Layer field (the Layer field is the original CAD layer for each object). Apply the query and all objects in that shapefile with that particular layer type will be selected.

#### **5.1.2 Export Feature**

With the cursor over the shapefile name the Table of Contents view, right-click and choose

Data ► Export Data. Export the selected features as a new shapefile. Repeat those steps for each layer to convert to a separate shapefile.

## **5.2 Creating GIS Polygons From CAD Line Data**

Sometimes, objects that appear as polygons in CAD will transfer to GIS as line data. Using the Trace Tool on the Editor toolbar in GIS, new polygons can be traced from line data.

### **5.2.1 Create New Polygon Layer for Tracing Line Feature**

Add to the dataview the line shapefile from which the new polygons will be traced. Add the polygon shapefile to which the new polygons will be added. If there is no current polygon shapefile, create a new polygon shapefile in ArcCatalog and add it to the dataview.

### **5.2.2 Start Editing**

Under the Editor toolbar, choose “Start Editing.” If prompted, choose the folder which contains the shapefiles to be edited. Also on the Editor toolbar, set the Task to “Create New Feature” and the Target to the polygon shapefile.

### **5.2.3 Use Trace Tool to Make Polygon Feature**

Using the Editor’s Selection Tool, select the lines to be traced into a polygon. Hold the <shift> key when selecting to make multiple selections, but only select one polygon at a time. Using the Editor’s Trace Tool, click sequential vertices of the selected lines to form a polygon. To complete the polygon, right-click and choose “Finish Sketch”. Repeat until all polygons have been created.

### **5.2.4 Save Edits**

When all polygons have been created, choose “Stop Editing” in the Editor toolbar, and save the edits. New polygons have now been created from CAD line data.

## **6 Conclusion**

The CAD data are now wholly converted to a GIS format!

The remaining steps to adding the files to the Park GIS database include completing the metadata, adding the steps above as “process steps.” NPS spatial data must meet the NPS Spatial Data Specifications (SDS), available at [http://science.nature.nps.gov/nrgis/standards/docs/GISSpecs31105\\_final.pdf](http://science.nature.nps.gov/nrgis/standards/docs/GISSpecs31105_final.pdf), regardless of whether the data starts as GIS or CAD format.