APPENDIX II-7

RESULTS OF ENVIRONMENTAL INSPECTION

Contents

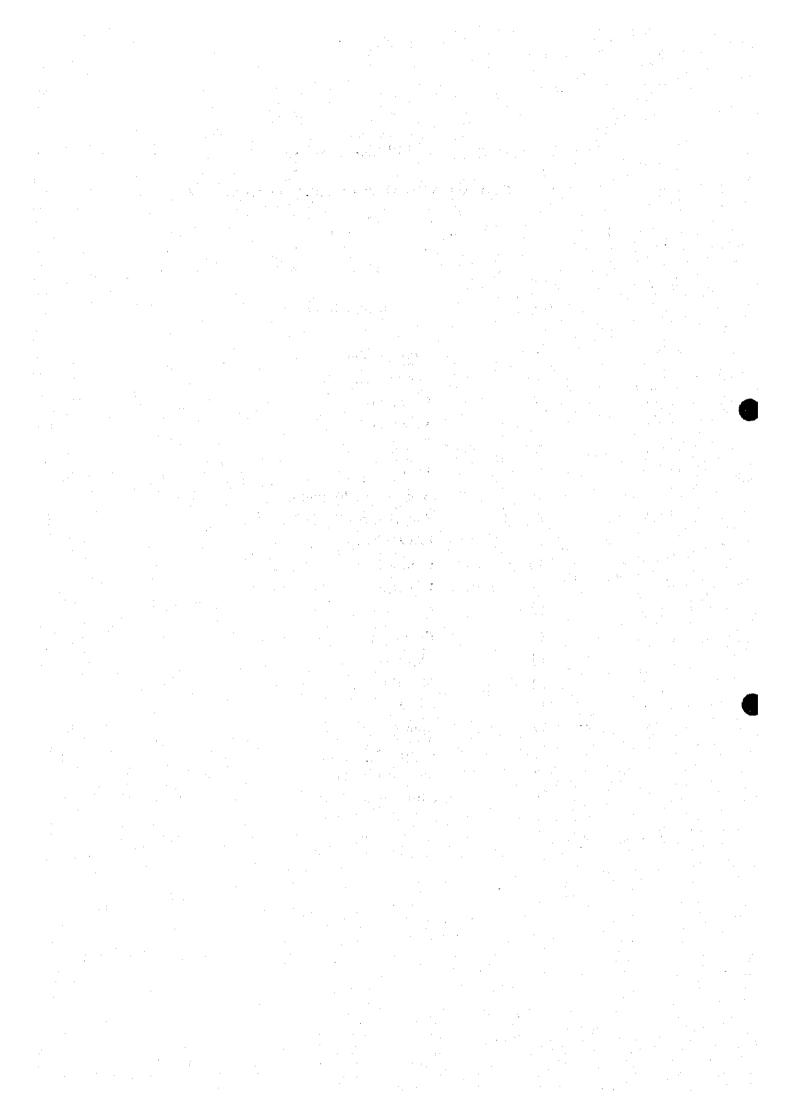
- A: Project and Site Description
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- C: Project Activity Matrix Sheets

APPENDIX II-7-A

PROJECT AND SITE DESCRIPTION SHEETS

Contents

No.	Bridge Name
1	Confluencia
2	David Garcia
3	Granallas
4	Ventanas
5	San Jose
6	Puangue
7	San Jose de Marchiue
8	Antivero No. 2
9	Los Cardos
10	Cautin
11	El Indio
12	Quillen
13	Poculon
14	Malleco
15	Miraflores
16	San Juan
17	Medina
18	Cautin (88)
19	Salva Tu Alma
20	Quinchilca



Project location: No. h Bridge name: Confluencia Region: IV Coquimbo Province: Choapa

<u> Item</u>	Description
Background	Flaking and deterioration on surface paint of the main steel beam
	is recognized.
	Cracks are recognized on the reinforced concrete cantilevered deck.
	Damages are recognized on railing post connections and top rails.
Objectives	Repair of repainting of steel beam, cracks of reinforced concrete deck,
	re-installation of railing is required.
	If possible widen of sidewalks is desirable for visitors due to provision of
	enough space for enjoy valley scenic view at the location.
Executing Agency	Ministry of Public Works (MOP)
Beneficiaries	Keep maintaining smooth and safety traffic.
	Safety and pleasant pedestrian crossing on the bridge sidewalks if enough
	width of side walks with sufficient strength of the railing.
Project Components	
Existing bridge structure	Slab(Conc.), Beam(Steel), Abutment(Conc.), Pier(Conc.), Foundation(Conc.)
bridge length, width	Length(m), Width(m)
Other specific features	Carriage way width (m), Side walk width (m)
Project Type	() Replacement, (X) Repair
Road Type	()Urban / (X)Rural area, ()Plain area /(X)Mountain area
	(X)Paved/()Unpaved
Existing traffic volume	Year 79/6/13(Fri.) (46)Cars/hour, ()Cars/day
Road width/lanes	Exist Width = $(5x2 \text{ m})$ Nos. lanes = (2)
Road structure	()Embankment / ()Elevated / (X)Others: Cutting of original ground
Supplemental	Parking and vista space at right bank of downstream.
facilities	
Others	River name: Choapa, Illapel river is confluenced at upperstreram.
	The bridge construction began in 1973 and finished in 1978.
	The area vicinity of the bridge has no other detour route to cross the river.
	Area of th bridge and it's surroundings has potentially a good view point of
	rocky deep valley and river confluence.
	Illapel is the nearest town 6 km off the bridge.
	imper to the rediest town o kin ou die oriege.
	<u> </u>

Project location: No. h Bridge name: Confluencia Region: IV Coquimbo Province: Choapa

Item		Description	
Social envir			
	Upperstream: Left bank area:	Right bank area:	
Residents, Indigenous people	A farm house at approx. 30 m distan	No settlement	
	from the bridge		
	Downstream: Left bank area:	Right bank area:	
	4 farm houses at approx. 70m to	No settlement	
	100 m distance from the bridge		
Their views on the project			
Others			
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:	
Urban area, Farm land, Others	Barren hill and partially farm land	Barren hill and grass land	
Historic & cultural site, Scenic spot			
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:	
	Barren hill and partially farm land	Barren hill and grass land	
	•		
Economy:	Upperstream: Left bank area:	Right bank area:	
Commerce, Agriculture, Forestry	Agriculture	Agriculture	
Others	Downstream: Left bank area:	Right bank area:	
	Forestation and agriculture	Agriculture	
Transport:	No bus terminal		
Bus terminal, etc.			
Natural env	ronment		
Topography, (Feature of river bank	Upperstream: Left bank area;	Right bank area:	
area)		Steep rocky cliff with flat river bed sprea	
Steep slopes, Soft ground, Wetland		of river confluent	
	Downstream: Left bank area:	Right bank area:	
	Steep rocky cliff of 25m to 30m dep	Steep rocky cliff of 25 to 30m depth	
Geology, (feature of river bank/bed)	Left bank area:	Right bank area:	
Outcrop, stone, gravel, sand / Fault	Rocky outcropped river bank	Rocky outcropped river bank	
Soil type, etc.,			
	River bed:		
	Course large stony river bed		
Hydrology, (Feature of river flow,	A confluence of river at aprox 200	m at upstream. Flow direction: NW	
Water level, flood level)		it deep point, flow velocity aprox 0.5m/se	
	Flood level: plus 5m from existing v		
Fauna & Flora / habitats	Thorny heath dry mountainous area		
Rare species /community, etc.,	Common fish fauna,		
	No specific area of importance. Ran	re species are not recognized	
Pollu			
Complaints:	No specific complaint	· · · · · · · · · · · · · · · · · · ·	
Population of the upmost concern			
Measures taken:	No necessity		
Institutional measures			
Compensation			
Others	The site has high notentials of con-	c point of valley landscape for visitors.	
Onicis	The site has high potentials of seein	o point of variey failuscape for visitors.	

Project location: No.2 Bridge name: David Garcia Region: V. Valparaiso, Province: Los Andes

Ite	m Description
Background	The bridge was built in 1930's and deteriorated condition.
	Bridge length is not enough width of river flow.
	Many damages on railing portions and expansion joints are recognized.
	Increase of traffic volume will be highly required on the load capacity of the bridge.
	Narrow width for pedestrian sidewalks of the bridge.
OL 1 - 41	Problems of traffic accidents on pedestrian crossing on the bridge.
Objectives	Replacement of the bridge due to strengthen of deteriorated existing structure
	condition and increasing of traffic volume.
	Widen of carriage way and sidewalk.
	Safeguard and security for pedestrian path on the bridge
Executing Agency	Ministry of Public Works (MOP)
Beneficiaries	Maintain of smooth and safety in increased traffic volume.
	Safety pedestrian crossing on the bridge sidewalks if enough width of side walks.
	, Francisco
Duellock Commonwell	
Project Components	
Existing bridge structure	Slab(Conc.), Beam(conc.), Abutment(Conc.), Pier(Conc.), Foundation(Conc.)
bridge length, width	Length(93.5m), Width(8.3m)
Other specific features	Carriage way width (6.0m), Side walk width (1.15m)
Project Type	(X) Replacement, () Repair
Road Type	(X)Urban/()Rural area, (X)Plain area/()Mountain area
	(X)Paved/()Unpaved
Existing traffic volume	Year 79/6/12(Thr), 6/30 (255)Cars/hour, ()Cars/day
	Exist Width = (3x2 m) Nos. lanes = (2)
Road width/lanes	
Road structure	(X)Embankment / ()Elevated / ()Others: Embankment at left bank with 100m
Supplemental	Concrete revetment with 2m in high, 200m in length at right bank of upper
facilities	
lacinies	watershed.
•	
Others	River name: Aconcagua, Flow direction: NW
	Road: Town road (Los Andes - San Esteban) of Los Andes.
	Bridge locates at 1,2km from town center of Los Andes.
	The American Control of the Control
	The bridge was the first reinforced concrete bridge built in 1930's.

Project location: No.2 Bridge name: David Garcia Region: V. Valparaiso, Province: Los Andes

Iten	1	Description
Social envir	ronment	
Inhabitants:	Upperstream: Left bank area:	Right bank area:
Residents, Indigenous people	None	Farm house locate at approx. 70m distance
		from the bridge
	Downstream: Left bank area:	Right bank area:
	None	Cattle market facility site locates adjacent
		the bridge.
Their views on the project		
Others		
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others	Barren land,	Agriculture (Vine yard)
Historic & cultural site, Scenic spot	Residential at hinterland	
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:
	Barren land, residential at hinterland	
		Residential at hinterland
Economy:	Upperstream: Left bank area:	Right bank area:
Commerce, Agriculture, Forestry	Barren land, Small sand borrow pits	
Others	Downstream: Left bank area:	Right bank area:
	Agriculture	Barren land
Transport:	None	
Bus terminal, etc.		
Natural en	ironment	
Topography, (Feature of river bank	Upperstream: Left bank area:	Right bank area:
area)	Slope and terrace mixed bank	Slope and terrace mixed bank
Steep slopes, Soft ground, Wetland		
	Downstream: Left bank area:	Right bank area:
	Slope and terrace mixed bank	Slope and terrace mixed bank
Geology, (feature of river bank/bed)	Left bank area:	Right bank area:
Outcrop, stone, gravel, sand / Fault		Gravel and silt soil mixed bank
Soil type, etc.,		
	River bed:	
	Flat river bed with round grovels an	d stone river bed
Hydrology, (Feature of river flow,		evel dunes exist in the water flow. Water dep
Water level, flood level)		Flow velocity of Aprox 1.5m/sec.
with aviving the total in the in-	I Of 1.5th at now conter of the firet.	
17 1101 10707, 11000 10701 7		
Fauna & Flora / habitats	Flood level comes up to 3.5m from	the river bottom. Flow direction: NW
Fauna & Flora / habitats	Flood level comes up to 3.5m from Pre-cordilleran deciduous forest are	the river bottom. Flow direction: NW a, dry land vegetation. Eucaliputus plantings
	Flood level comes up to 3.5m from Pre-cordilleran deciduous forest are left bank. Common fish fauna and b	the river bottom. Flow direction: NW a, dry land vegetation. Eucaliputus plantings irds
Fauna & Flora / habitats	Flood level comes up to 3.5m from Pre-cordilleran deciduous forest are left bank. Common fish fauna and b No specific area of importance. Rar	the river bottom. Flow direction: NW a, dry land vegetation. Eucaliputus plantings irds
Fauna & Flora / habitats Rare species /community, etc., Pollu	Flood level comes up to 3.5m from Pre-cordilleran deciduous forest are left bank. Common fish fauna and b No specific area of importance. Rarttion	the river bottom. Flow direction: NW a, dry land vegetation. Eucaliputus plantings irds
Fauna & Flora / habitats Rare species /community, etc., Pollu Complaints:	Flood level comes up to 3.5m from Pre-cordilleran deciduous forest are left bank. Common fish fauna and b No specific area of importance. Rar	the river bottom. Flow direction: NW a, dry land vegetation. Eucaliputus plantings irds
Fauna & Flora / habitats Rare species /community, etc., Pollu	Flood level comes up to 3.5m from Pre-cordilleran deciduous forest are left bank. Common fish fauna and b No specific area of importance. Rarttion No specific complaint	the river bottom. Flow direction: NW a, dry land vegetation. Eucaliputus plantings irds
Fauna & Flora / habitats Rare species /community, etc., Pollu Complaints: Population of the upmost concern Measures taken:	Flood level comes up to 3.5m from Pre-cordilleran deciduous forest are left bank. Common fish fauna and b No specific area of importance. Rarttion	the river bottom. Flow direction: NW a, dry land vegetation. Eucaliputus plantings irds
Fauna & Flora / habitats Rare species /community, etc., Pollu Complaints: Population of the upmost concern Measures taken: Institutional measures	Flood level comes up to 3.5m from Pre-cordilleran deciduous forest are left bank. Common fish fauna and b No specific area of importance. Rarttion No specific complaint	the river bottom. Flow direction: NW a, dry land vegetation. Eucaliputus plantings irds
Fauna & Flora / habitats Rare species /community, etc., Pollu Complaints: Population of the upmost concern Measures taken: Institutional measures Compensation	Flood level comes up to 3.5m from Pre-cordilleran deciduous forest are left bank. Common fish fauna and b No specific area of importance. Rar stion No specific complaint No necessity	the river bottom. Flow direction: NW a, dry land vegetation. Eucaliputus plantings irds e species are not recognized
Fauna & Flora / habitats Rare species /community, etc., Pollu Complaints: Population of the upmost concern Measures taken: Institutional measures	Flood level comes up to 3.5m from Pre-cordilleran deciduous forest are left bank. Common fish fauna and b No specific area of importance. Rar stion No specific complaint No necessity River bank areas are under the circ	the river bottom. Flow direction: NW a, dry land vegetation. Eucaliputus plantings irds

Project location: No.3 Bridge name: Granallas Region: V. Valparaiso, Province: San Fellipe de Aconcagua

Iter	n Description
Background	The bridge was built in 1930's and deteriorated condition.
	Bridge length is not enough width of river flow.
	Many damages on railings and expansion joints are existed.
	Single carriage way and narrow width is not enough for increasing traffic volume.
	Timber plate deck is not sufficient for existing traffic condition.
Objectives	Copper mining site is situated at hillside area in right bank hinterland, Heavey
	loaded trucks pass through the bridge which has limitation of 12 tons weight.
	Single timber plate carriage way of the bridge is not sufficient for Heavey loaded
	trucks. Safeguard and security for pedestrian path on the bridge
Executing Agency	Ministry of Public Works (MOP)
Beneficiaries	Maintain of 2 way carriage way and smooth and safety in increased traffic volume.
	Safety pedestrian crossing on the bridge sidewalks.
Project Components	
Existing bridge structure	Slab(Timber), Beam(Steel), Abutment(Conc.), Pier(Conc.), Foundation(Conc.)
bridge length, width	Length(50.0m), Width(4.3m)
Other specific features	Carriage way width (2.52m), Side walk width (0.3m)
Project Type	(X) Replacement, () Repair
Road Type	()Urban / (X)Rural area, (X)Plain area /()Mountain area
	()Paved / (X)Unpaved
Existing traffic volume	Year 79/6/16(Mon), 6/30(Mon) (30)Cars/hour, ()Cars/day
Road width/lanes	Exist Width = (5.5m) Nos. lanes = (2)
Road structure	(X)Embankment/()Elevated/()Others: Extended embankment at left bank
Supplemental	Stone piled revetment with 2.5m in high, 20m in length at right and left bank of
facilities	upper watershed.
	Temporally wooden suspension pedestrian bridge is located adjacent at
take a second	Upperstream.
Others	River name: Putaendo, Tributary of Aconcagua river.
	Road: Local branch line of E-71, Putaendo is the nearest town off 0.5km.
	Timber plate deck was replaced 1995. Paintings of wood railing has been finished
	recently.
	Location of replacement of the new bridge shall be the same place of the existing
	one. Detour route of the bridge locates at uppershed, Possibility of crossing river on
	site in dry season when water not flows.

Project location: No.3 Bridge name: Granallas Region: V. Valparaiso,

	Province: San Fellipe	de Aconcagua
lten		Description
Social envir	ronment	
Inhabitants:	Upperstream: Left bank area:	Right bank area:
Residents, Indigenous people	None	Farm houses locate at approx. 30m distance
	-	from the bridge
:	Downstream: Left bank area:	Right bank area:
	None	Farm houses locate at approx. 30m distance
		from the bridge.
Their views on the project		
Others		
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others	Barren land,	Agriculture (Orchard)
Historie & cultural site, Scenic spot	Residential at hinterland	
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:
	Barren land, ware house at 100m	Agriculture (Orchard)
	Residential at hinterland	Residential at hinterland
Economy:	Upperstream: Left bank area:	Right bank area:
Commerce, Agriculture, Forestry	Barren land, Stone borrow pits	Agriculture
Others	Downstream: Left bank area:	Right bank area:
	Stone borrow pits, agriculture	Agriculture
Transport:	None	
Bus terminal, etc.		
Natural en	riconment	
Topography, (Feature of river bank	Upperstream: Left bank area:	Right bank area:
area)	Flat expanded bank	Flat expanded bank
Steep slopes, Soft ground, Wetland		
	Downstream: Left bank area:	Right bank area:
	Flat expanded bank	Flat expanded bank
Geology, (feature of river bank/bed)	Left bank area:	Right bank area:
Outcrop, stone, gravel, sand / Fault	The state of the s	Round stony bank
Soil type, etc.,	and the second second second	
	River bed:	
	Flat river bed with round stony bed	i.
Hydrology, (Feature of river flow,	Flow regime sifted to the right ban	k and gravel dunes exist in the water flow.
Water level, flood level)	Water depth of 0.6m and 0.4m/sec	flow velocity, Flow direction: SES
	Flood level comes up to high of br	
Fauna & Flora / habitats		rea, dry land vegetation. Scattered eucaliputus
Rare species /community, etc.,	plantings at river banks. Common	fish fauna and birds
	No specific area of importance. Re	are species are not recognized
Pollu		-
Complaints:	No specific complaint	
Population of the upmost concern		
Measures taken:	No necessity	
Institutional measures	1	
Compensation		
Others		
:		

Project location: No.7 Bridge name: Ventanas Region: V. Valparaiso, Province: Valparaiso

Ite	m Description
Background	Concrete honey combing are recognized on the reinforced concrete abutments.
	Exceeded rusting are recognized all way through the railing.
	Location of the bridge vicinity is heavy industrial zone, traffic of Heavey loaded
	trucks pass through the bridge and traffic volume is tended to increase.
	Narrow width for pedestrian sidewalks of the bridge.
Objectives	Repair of the bridge for maintain existing function.
	Widen side walks for safeguard and security for pedestrian path on the bridge.
D	M. Salar of D. M. A. (MOD)
Executing Agency	Ministry of Public Works (MOP)
Beneficiarles	Maintain safety traffic flow as well as safety pedestrian crossing on the bridge
	sidewalks.
Project Components	
Existing bridge structure	Slab(Conc.), Beam(Conc.), Abutment(Conc.), Pier(Conc.), Foundation(Conc.)
bridge length, width	Length (m), Width (m)
1 .	
Other specific features	Carriage way width (m), Side walk width (1.2m)
Project Type	() Replacement, (X) Repair
Road Type	(X)Urban/()Rural area, (X)Plain area/()Mountain area
	()Paved/(X)Unpaved
Existing traffic volume	Year 79/6/17(Tue), 6/27(Fri.) (360)Cars/hour, ()Cars/day
Road width/lanes	Exist Width = $(3.5 \times 2 \text{ m})$ Nos. lanes = (2)
Road widthylanes	Exist Width = $(3.3 \times 2 \text{ in})$ Nos. lanes = (2)
Road structure	()Embankment / ()Elevated / (X)Others: Flat type
Supplemental	
facilities	
Others	River name: Estero Ventanas, Road: F-30-F Principal road.
·	Bridge location is the central area of heavy industrial zone, Las Ventanas is the
	nearest town center off 1.0km from the bridge.
	newes to the content of Lordin Hold the Orluge.
·	
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Project location: No.7 Bridge name: Ventanas Region: V. Valparaiso, Province: Valparaiso

Iten		Description
Social envis		
Inhabitants:	Upperstream: Left bank area:	Right bank area:
Residents, Indigenous people	None	None
	Downstream: Left bank area:	Right bank area:
	None	None
	Mone	Tione .
Their views on the project		
Others		
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others	Industrial, Copper mint yard	Industrial, Storage yard
Historic & cultural site, Scenic spot		
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:
	Industrial,	Industrial, Copper mint factory
de de	Discharge waste sedimentation pon-	d
Economy:	Upperstream: Left bank area:	Right bank area:
Commerce, Agriculture, Forestry	Industrial	Industrial
Others	Downstream: Left bank area:	Right bank area:
	Industrial	Industrial
Transport:	None	
Bus terminal, etc.		
Natural env	rironment	
Topography, (Feature of river bank	Upperstream: Left bank area:	Right bank area:
area)	Steep slope bank	Steep slope bank
Steep slopes, Soft ground, Wetland		
·	Downstream: Left bank area:	Right bank area:
	Steep slope bank	Steep slope bank
Geology, (feature of river bank/bed)	Left hank area	Right bank area:
Outcrop, stone, gravel, sand / Fault		Sandy silt bank
Soil type, etc.,	bundy one bunk	Buildy one outik
Son type, e.e.,	River bed:	
	Flat river bed with sandy silt bed.	
Hydrology, (Feature of river flow,		ted a tidal backwater due to closer to the coa
Water level, flood level)		1m/sec. flow velocity, Flow direction: NE
	1	gh from the river bed and tidal affected area
Fauna & Flora / habitats	Thorny heath of dry coastal area ve	T
Rare species /community, etc.,	Common small fish fauna and coas	
	No specific area of importance. Ra	
Pollu		
Complaints:	No specific complaint	
Population of the upmost concern		
Measures taken:	No necessity	
Institutional measures		
Compensation		
Others	Upmost concern for the inhabitants	s of the area is exhaust ambient air from cop
- 30-4-4	refining factory.	
	neining factory.	

Project location: No.10 Bridge name: San Jose Region: Metropolitana, Province: Chacabuco

Ite	m Description	
Background	Old concrete bridge, Steel bars are exposed on the main beam. Damages on the	
	railing and expansion joint are recognized.	
	High volume of traffic is facing congestion of vehicle waiting both ends of the	
	hiden Board eligement has relicing to gestion of venicie wanting ooin ends of the	
	bridge. Road alignment has critical curvature on the right bank.	
	Need of double lanes of carriage way of the bridge.	
	Narrow width for pedestrian sidewalks of the bridge.	
Objectives	Need of double lanes of carriage way of the bridge.	
	Replacement of the bridge.	
	Location of the replacement is required adjustment to the road alignment at	
	right bank.	
Executing Agency	Ministry of Public Works (MOP)	
Beneficiaries	Establish 2 way carriage smooth traffic flow on double lanes carriage way of th	
	bridge.	
	Safety pedestrian crossing on the bridge sidewalks.	
Project Components		
	State Court Provide the Court	
Existing bridge structure	Slab(Conc.), Beam(Conc.), Abutment(Conc.), Pier(Conc.), Foundation(Conc.)	
bridge length, width	Length (16.1m), Width (6.0m)	
Other specific features	Carriage way width (4.0m x 1), Side walk width (0.6m)	
Project Type	(X) Replacement, () Repair	
Road Type	(X)Urban/()Rural area, (X)Plain area/()Mountain area	
	()Paved/(X)Unpaved	
Existing traffic volume	Year 79/6/18(Wed.), (270)Cars/hour, ()Cars/day	
	(Lib) Calshay	
Road width/lanes	Evid With (20 - 2 -) VI ((2)	
Road width/latics	Exist Width = $(3.0 \times 2 \text{ m})$ Nos. lanes = (2)	
Road structure	()Embankment / ()Elevated / (X)Others: Flat type	
Supplemental		
facilities		
Others	River name: Colina, Tributary of Estero Lampa of Maipo river.	
~ · · · · · · · · · · · · · · · · · · ·		
	Road: Principal road G-15	
	San Jose is the nearest town 1.0 km off the bridge.	
·	Location of the replacement bridge is recommended at down stream with	
	consideration of road alignment.	

Project location: No. 10 Bridge name: San Jose

Province: RM

Item		Description
Social envir		
Inhabitants:	Upperstream: Left bank area:	Right bank area:
Residents, Indigenous people	None	Farm residence
	Downstream: Left bank area:	Right bank area:
	Farm residence	None
	• •••••	
Their views on the project	Traffic conjestion on the bridge poin	t.
Others		
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others	Industrial, Stone manufacturing yard	Agricultural, farm yard
Historic & cultural site, Scenic spot	· i	
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:
	Agricultural, orchard	Agricultural, farm yard
Economy:	Upperstream: Left bank area:	Right bank area:
Commerce, Agriculture, Forestry	Agricultural, partially industrial	Agricultural,
Others	Downstream: Left bank area:	Right bank area:
	Agricultural, fruit production	Agricultural,
Transport:	None	
Bus terminal, etc.		
Natural env		· · · · · · · · · · · · · · · · · · ·
Topography, (Feature of river bank		Right bank area:
area)	Steep slope bank with 2.5m of low	Steep slope bank with 3.5m high
Steep slopes, Soft ground, Wetland	terraced levee	
	Downstream: Left bank area:	Right bank area:
	Steep slope bank with 3.5m high	Steep slope bank with 3.5m high
Geology, (feature of river bank/bed):	Left bank area:	Right bank area:
		Sandy silt with gravel mixed soil bank
Soil type, etc.,		
	River bed:	
	Flat river bed with sandy silt bed.	
Hydrology, (Feature of river flow,	Flow regime is moderate and affect	ed a tidal backwater due to closer to the co
Water level, flood level)	Water depth of 1.2m and 1.0m/sec.	flow velocity, Flow direction: SW
	Flood level comes up to level of the	- ·
Fauna & Flora / habitats	Pre-cordilleran deciduous forest are	a, dry land vegetation.
Rare species /community, etc.,	Common small fish fauna.	
	No specific area of importance. Rai	e species are not recognized
Pollu	tion	
Complaints:	No specific complaint	
Population of the upmost concern		
Measures taken:	No necessity	
Institutional measures		
Compensation		
Others	Road on the right of the downstream	n has sharp curved alignment at bridge, an
	serious traffic conjestion occurred o	on the point.
	The state of the s	

Project location: No.12 Bridge name: Punague Region: Metropolitana Province: Melipilla

Ite	
ackground	The bridge was built in 1930s, Web of reinforced concrete beam at bridge end
	parts has many cracks. Damage of concrete surface flaking, exposure of
	steel bars, concrete honey combing are recognized at abutment and piers.
	Scour and erosion at the pier of lest bank side will be presumed.
	Increase of traffic volume will be affected on the load capacity of the bridge.
)bjectives	Replacement of the bridge due to strengthen of deteriorated existing structure
	condition and increasing of traffic volume.
	Problems of traffic accidents on pedestrian crossing, Consideration
	of security and safeguard for school children's path as well as daily community
	pedestrian flow.
	Safeguard and security for pedestrian path on the bridge
Executing Agency	Ministry of Public Works (MOP)
ieneficiaries	Maintain of smooth and safety in increased traffic volume.
and the second of the second o	Safety pedestrian crossing on the bridge if enough width of side walks.
roject Components	
Existing bridge structure	Slab(Conc.), Beam(conc.), Abutment(Conc.), Pier(Conc.), Foundation(Conc.)
bridge length, width	Length (51m), Width (8.0m)
Other specific features	Carriage way width (m), Side walk width (m)
the state of the s	
Project Type	(X) Replacement, () Repair
Road Type	()Urban / (X)Rural area, (X)Plain area / ()Mountain area
	(X)Paved/()Unpaved
Existing traffic volume	Year 79/6/12(Thr) (240)Cars/hour, ()Cars/day
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Road width/lanes	Exist Width = (3x2 m) Nos. lanes = (2)
Road Widniglanes	Exist width -(5x2 m) 1103, takes - (2)
Road structure	/ Y \Parkenkmant // \Pilouslad / Parkenkmant at left harb with 100m
	(X)Embankment / ()Elevated / Embankment at left bank with 100m
Supplemental	
facilities	
Others	River name: Estero Puange, Tributary of Maipo river
	The bridge locates in Puangue (100m), Melipill is the nearest town 11km off
	the bridge. Road: G-78 Principal road.
	A primary school and church locate at the bridge vicinity. Daily pedestrian
	flow activities cross over the bridge is facing traffic threaten.
•	Location of the bridge replacement will recommend at the downstream
	adjacent the existing bridge.

Project location: No.12 Bridge name: Punague Region: Metropolitana Province: Melipilla

Iten	1	Description
Social environment		
Inhabitants:	Upperstream: Left bank area:	Right bank area:
Residents, Indigenous people	None	A farm house at approx. 25m
		distance from the bridge
	Downstream: Left bank area:	Right bank area:
	None	A farm hatch locates adjacent the bridge.
		(2m off the bridge)
Their views on the project	Widen of the side walks of the bride	ge has been expected for safety pedestrian
Others	cross over the bridge against vehicl	- •
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others	Grass land, agriculture	Agriculture
Historic & cultural site, Scenic spot		Church locates aprox 150m off the bridge
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:
	Grass land, school yard	Agriculture
	Water level gauge of the river	Primary school at prox.100m off the bridge
Economy:	Upperstream: Left bank area:	Right bank area:
Commerce, Agriculture, Forestry	Agriculture	Agriculture
Others	Downstream: Left bank area:	Right bank area:
	Agriculture	Agriculture
Transport:		nary school at left bank of downshed
Bus terminal, etc.		
Natural env	ironment	
Topography, (Feature of river bank	Upperstream: Left bank area:	Right bank area:
area)	L	d High raised terrace bank and flat land on
Steep slopes, Soft ground, Wetland		top.
	Downstream: Left bank area:	Right bank area:
	Low moderate slope land	High raised terrace bank and flat land on
		top.
Geology, (feature of river bank/bed)	Left bank area:	Right bank area:
Outcrop, stone, gravel, sand / Fault	Swampy low river bank with silt so	il Strait single terrace with gravel mixed soil
Soil type, etc.,	deposit	
	River bed:	
	Silt sand with gravel river bed	
Hydrology, (Feature of river flow,	Flow regime sifted to the right bank	k, water depth of 4.5m at flow center of
Water level, flood level)	the river. Fast flow velocity of Apr	ox 1.0m/sec. Turbid water quality.
	Flood level comes up to 8.0m from	the river bottom. Flow direction: SSW
Fauna & Flora / habitats	Pre-cordilleran deciduous forest are	ea but dry land bush vegetation,
Rare species /community, etc.,	Common fish fauna,	
<u> </u>	No specific area of importance. Ra	re species are not recognized
Pollu	tion	
Complaints:	No specific complaint	
Population of the upmost concern	<u> </u>	
Measures taken:	No necessity	
Institutional measures		
Compensation		
Others		
	· · · · · · · · · · · · · · · · · · ·	

Project location: No.16 Bridge name: San Jose de March

Region: VI, Libertador General Bernardo O'Higgins, Province: Cachapol

Ite	n Description
Background	Flood level always inundates over the bridge due to occurs sedimentation of flown
	sandy silt at bottle neck of lake area.
	Many damages on bridge deck, railing and expansion joints are recognized.
	Concrete honey combing on sub-structure are also recognized.
	Concrete hone, comoning on sub-situetate are also recognized.
	Narrow width for pedestrian sidewalks of the bridge.
Objectives	Replacement of the bridge.
Dujecures	
	Establishment of smooth and flood safety traffic flow.
•	
Executing Agency	Ministry of Public Works (MOP)
Beneficiaries	Maintain smooth traffic especially in the flood periods.
	Safety pedestrian crossing on the bridge sidewalks.
Project Components	
Existing bridge structure	Slab(Conc.), Beam(Steel), Abutment(Conc.), Pier(Conc. cap with steel pier),
bridge length, width	Foundation (Conc.) Length (120.0m), Width (5.5m)
Other specific features	Carriage way width (4.0m x 1), Side walk width (0.6m)
Other speeme reactives	Carriago way widon (Nom x 1), olde walk widin (O.Om)
Project Type	(X) Replacement, () Repair
	()Urban/(X)Rural area, (X)Plain area/()Mountain area
Road Type	()Paved/(X)Unpaved
Eviating teeffic volume	
Existing traffic volume	Year 79/6/19(Thr), (12)Cars/hour, ()Cars/day
Road width/lanes	Exist Width = $(3.0 \times 2 \text{ m})$ Nos. lanes = (2)
Road widilylanes	[EALST 11 IGHT - (5.0 A 2 HI) 1705. IANCS = (2)
Pood structure	()Embankment (/)Ejavoted (/ V)Ost Flat
Road structure	()Embankment / ()Efevated / (X)Others: Flat type, unpaved condition
Supplemental	
facilities	
Others	River name: Tinguirica, Tributary of Rapel river.
	Consideration of bridge location at the Upperstream side would be better in relation
	with affected land aquisition matter.
· ·	
	Solution for traffic function even in the flood period.
	position to the tenesion even in the flood period,

Project location: No. 16 Bridge name: San Jose de March

-	•	
WA . WIT WAS . A	A ID I ANTICOLOR	Daniel Calland
Region: VI I thertagor	· Cleneral Kernarda I l'H100196	Province: Lachanoi
INCEION AND THEMSE	General Bernardo O'Higgins,	TIVILLES CHEMPOL

Item Description Social environment		
Inhabitants:	Upperstream: Left bank area:	Right bank area:
Residents, Indigenous people	None	Temporally hatch on the bank.
		Right bank area:
	None	Farm house on the top of banked hill
	·	
Their views on the project	Traffic difficulty cause by flooding o	over the bridge.
Others day of the		
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others	Barren land	Barren land
Historic & cultural site, Scenic spot		
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:
	Barren land	Barren land
Economy:	Upperstream: Left bank area:	Right bank area:
Commerce, Agriculture, Forestry	Agricultural,	Agricultural,
Others	Downstream: Left bank area:	Right bank area:
	Agricultural, fruit production	Agricultural,
Transport:	None	
Bus terminal, etc.		
Natural en	ironment	
Topography, (Feature of river bank	Upperstream: Left bank area:	Right bank area:
area)	Slight sloped hilly mounded land	Low swampy mash.
Steep slopes, Soft ground, Wetland		
	Downstream: Left bank area:	Right bank area:
the state of the s	Slight sloped hilly mounded land	Low swampy mash.
	The state of the s	
Geology, (feature of river bank/bed)	Left bank area:	Right bank area:
Outcrop, stone, gravel, sand / Fault	Sandy silt with gravel mixed soil ba	Sandy silt with gravel mixed soil bank
Soil type, etc.,		
	River bed:	
	Flat expanded river bed with silt bed	1.
Hydrology, (Feature of river flow,	Flow regime is moderate due to floo	od retarding basin area.
Water level, flood level)	Water depth of 1.5m and 0.2m/sec.	flow velocity, Flow direction:
	Flood level comes up to level of the	road.
Fauna & Flora / habitats	· -	it objective area is wet swampy land native
Rare species /community, etc.,	1	a and birds. No specific area of importance b
	lake area recreation zone locates ne	ar here. Rare species are not recognized
Polit		
Complaints:	Substitute detour to cross the river of	luring construction period.
Population of the upmost concern	Land acquisition may be required de	•
Measures taken:		d during dry season due to no water flow or
Institutional measures	less water for easy cross over, and t	- -
Compensation	· • · · · · · · · · · · · · · · · · · ·	I proper compensation if in the case.
Others		is been made by embanked earth fill, ground
		free for flood level when new bridge to be
	planed.	the state of the s

Project location:

Bridge name: Antivero No.2

Region: VI, Libertador General Bernardo O'Higgins, Province: Colchagua

Iter	n Description	
Background Objectives	The bridge constructed during 1935 to 1940 and comes to be deteriorated not enough to functioned today's increased traffic volume. Many cracks and damaged portions at the main beam of the ends, Exposure of steel bars with honey combing concrete are recognized. Scour at the pier foundation also generated. Increase of traffic volume and heavy loaded trucks require enough width of carriage way. Replacement of the bridge	
Objectives	Widen of the carriage way, safeguard and security for pedestrian path are required.	
Executing Agency	Ministry of Public Works (MOP)	
Beneficiaries	Smooth and safety traffic flow and passage function, Safety pedestrian crossing on the bridge sidewalks.	
Project Components		
Existing bridge structure bridge length, width Other specific features	Slab(Conc.), Beam(Conc.), Abutment(Conc.), Pier(Conc.), Foundation(Conc.) Length(102.9m), Width(8.5m) Carriage way width (3.0m x 2), Side walk width (1.2m)	
Project Type	(X) Replacement, () Repair	
Road Type	(X)Urban/()Rural area, (X)Plain area/()Mountain area (X)Paved/()Unpaved	
Existing traffic volume	Year 79/6/24(Tue), (720)Cars/hour, ()Cars/day	
Road width/lanes	Exist Width = $(3.0 \times 2 \text{ m})$ Nos. lanes = (2)	
Road structure	(X)Embankment/()Elevated/()Others:	
Supplemental facilities	20m long stone revetment on the right bank of downstream.	
Others	River name: Estero Antivero, tributary of Chachapol river of Papel river. Road: I-50 Principal road, San Fernando is the nearest town 1.2km off the bridge. Location of the replacement site is recommended at Upperstream of the bridge.	

Project location: Bridge name: Antivero No.2

Region: VI, Libertador General Bernardo O'Higgins, Province: Colchagua

Iten		Description
Social envi		
Inhabitants:	Upperstream: Left bank area:	Right bank area:
Residents, Indigenous people	None	None
	Downstream: Left bank area:	Right bank area:
	None	None
Their views on the project		s over bridge due to Heavey traffic with
Others	narrow carriage way.	
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others	Barren grass land	Agricultural, vine yard
Historic & cultural site, Scenic spot		Industrial (corn mill) adjacent vine yard
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:
	Agricultural, vine yard	Agricultural,
		Workshop yard of agricultural machines
Economy:	Upperstream: Left bank area:	Right bank area:
Commerce, Agriculture, Forestry	Agricultural,	Agricultural, industrial
Others	Downstream: Left bank area:	Right bank area:
	Agricultural,	Agricultural,
Transport:	None	
Bus terminal, etc.		
Natural en	vironment	
Topography, (Feature of river bank		Right bank area:
area)	Steep sloped bank within flat land	Steep sloped bank within flat land
Steep slopes, Soft ground, Wetland		
	Downstream: Left bank area:	Right bank area:
1,.	Steep sloped bank within flat land	Steep sloped bank within flat land
Geology, (feature of river bank/bed)	Left bank area:	Right bank area:
		Sandy silt with gravel mixed soil bank
Soil type, etc.,		
.	River bed:	·
	Flat expanded river bed with round	stone bed and stone dunes in river course.
Hydrology, (Feature of river flow,	Flow regime is rather fast and shalle	·
Water level, flood level)	Water depth of 0.5m and 0.5m/sec.	. ,
		the river bed. Dry wash in summer season.
Fauna & Flora / habitats	Thorny heath of dry coastal area na	
Rare species /community, etc.,	Common small fish fauna and birds	
	No specific area of importance, Rai	· ·
Polls	· 	
Complaints:	No specific complaint	
Population of the upmost concern	openia vompium	
Measures taken:	No necessity	·
Institutional measures	l'io necessity	
Compensation		
1 1 URBS # # 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	
	Location of salasament - Cabe bet	las is massibility for affection of come action
Others	Location of replacement of the brid private land.	ge is possibility for affection of some portion of

Project location: No.20 Bridge name: Los Cardos

Region: VI, Libertador General Bernardo O'Higgins, Province: Colchagua

Iter	n Description		
Background	Narrow width of single carriage way of timber plate bridge,		
	Heavey loaded trucks pass under the maximum limit of 12tons capacity.		
	Treates to acceptacing the maximum mint of 12tons capacity.		
Objectives	Repair of timber deck plate and railing which has damaged portion.		
	, g and a managed pointons		
	the state of the s		
Executing Agency	Ministry of Public Works (MOP)		
ieneficiaries	Sustain of safety traffic passage.		
roject Components			
Existing bridge structure	Slab(Timber.), Beam(Steel), Abutment(Conc.), Pier(Conc.), Foundation(Conc.)		
bridge length, width	Length(75.0m), Width(4.5m)		
Other specific features	Carriage way width (2.6 m x 1), Side walk width (0.3m)		
Project Type	() Replacement, () Repair No need of repair or replacement		
Road Type	()Urban / (X)Rural area, (X)Plain area / ()Mountain area		
Note 1990			
E-1-41	()Paved / (X)Unpaved		
Existing traffic volume	Year 79/6/25(wed), (5) Cars/hour, () Cars/day		
Road width/lanes	Exist Width = (4.3m in total width) Nos. lanes = (1)		
Road structure	()Embankment / ()Elevated / (X)Others: Flat type, unpaved condition		
	71 77 77 77 77 77 77 77 77 77 77 77 77 7		
[Supplemental]	TELECTRIC Transmission line locate unpershed side		
Supplemental facilities	Electric transmission line locate uppershed side.		
Supplemental facilities	reflective transmission line locate uppershed side.		
1	refective transmission line locate uppershed side,		
facilities			
facilities	River name: Estero Las Toscas, tributary of Tinguiririch river		
facilities	River name: Estero Las Toscas, tributary of Tinguiririch river Road: secondary road,		
facilities	River name: Estero Las Toscas, tributary of Tinguiririch river Road: secondary road,		
facilities	River name: Estero Las Toscas, tributary of Tinguiririch river		
1	River name: Estero Las Toscas, tributary of Tinguiririch river Road: secondary road, San Miguel is the nearest village off 3km from the bridge.		
facilities	River name: Estero Las Toscas, tributary of Tinguiririch river Road: secondary road, San Miguel is the nearest village off 3km from the bridge. Timber slab has been repaired 1991.		
facilities	River name: Estero Las Toscas, tributary of Tinguiririch river Road: secondary road, San Miguel is the nearest village off 3km from the bridge.		

Project location: Bridge name: No.20 Los Cardos

Region: VI, Libertador General Bernardo O'Higgins, Province: Coichagua

Iter	TI .	Description
Social envi	ronment	
Inhabitants:	Upperstream: Left bank area:	Right bank area:
Residents, Indigenous people	None	None
	Downstream: Left bank area:	Right bank area:
	None	
	None	A farm house in 100m off the bridge.
Their views on the project	Traffic difficulty due to narrow bridg	ge width.
Others	<u> </u>	
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others	Farm land, maize	Farm land, maize
Historic & cultural site, Scenic spo-		
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:
Hospitals and other facilities		I **
	Farm land, maize	Farm land, maize
Economy:	Upperstream: Left bank area:	Right bank area:
Commerce, Agriculture, Forestry	Agricultural,	Agricultural,
Others	Downstream: Left bank area:	Right bank area:
Others		Agricultural,
	Agricultural,	Agriconoral,
Transport:	None	
Bus terminal, etc.	<u> </u>	
Natural en		Inv. Laborat
Topography, (Feature of river bank	1	Right bank area:
arca)		Steeply slope bank and flat terraced top
Steep slopes, Soft ground, Wetland		
	Downstream: Left bank area:	Right bank area:
	Swampy flat mash bank continues to	Steeply slope bank and flat terraced top
	low lying farm land	
Geology, (feature of river bank/bed)	Left bank area:	Right bank area:
Outcrop, stone, gravel, sand / Faul	Silt soil with some gravel mixed bar	Silt soil with some gravel mixed bank
Soil type, etc.,		
	River bed:	
	Silt soil river bed	
Hydrology, (Feature of river flow,	Flow regime is rather sifted left ban	k side with deep water volume
Water level, flood level)		flow velocity, Flow direction: NNW
Traiter to total, flood to total	Flood level comes up to level of nea	•
Fauna & Flora / habitats		a, native low bush type vegetation, Salix spr
Rare species /community, etc.,		
Rate species /community, etc.,		. Common small fish fauna and birds.
Polls	No specific area of importance. Rar	e species are not recognized
Complaints:		
	No specific complaint	
Population of the upmost concern		<u> </u>
Measures taken:	No necessity	
Institutional measures		
Compensation		
Others		
•		
	· ·	

Project location: No.a Bridge name: Cautin Region: IX, Alaucania Province: Cautin

Iter	m Description	
Background	Surface of concrete railings has been weathered and quite deteriorated.	
	Many exposure of steel bars on the main concrete beams are recognized.	
	Large cracks and alligator cracks are observed on the main concrete beam.	
	Concrete cracks are recognized on the abutments.	
	Constitution and reverginged on the administration	
Objectives	Repair of damaged portion of the bridge.	
	Maintain smooth and safety traffic flow and pedestrian passage.	
	name of the catery frame from and pedestrian passage.	
Executing Agency	Ministry of Public Works (MOP)	
Beneficiaries	Maintain smooth and safety traffic flow as well as safe guard of pedestrian path	
	part of pedestrain part	
Project Components		
Existing bridge structure	Slab(RC), Beam(RC), Abutment(RC), Pier(RC), Foundation(Spread foundation)	
bridge length, width	Length (140.0m), Width (6.6m)	
Other specific features	Carriage way width (5.0m), Side walk width (0.7m X 2)	
	No. 10	
Project Type	() Replacement, (X) Repair	
Road Type	()Urban / (X)Rural area, (X)Plain area / ()Mountain area / ()Hilly area	
	()Paved/(X)Unpaved	
Existing traffic volume	Year 79/7/12 (Sat), (8) Cars/hour, () Cars/day	
Road width/lanes	Exist. Width = (7.0m) Nos. lanes = (2)	
Road structure	()Embankment / ()Elevated / (X) Flat:	
Supplemental	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
facilities		
Others	River name: Cautin	
	Road category: Principal road S-11-R,	
÷	The bridge was constructed in 1930's	
	Lautaro is the nearest town apart 0.8km from the bridge.	
	Leading to the neatest town about otokil Holli life of 1086.	

Project location: No.a Bridge name: Cautin Region: IX, Alaucania Province: Cautin

lte:	n	Description	
Social envi	ronment		
Inhabitants:	Upperstream: Left bank area:	Right bank area:	
Residents, Indigenous people	Several small houses locate 30 to 40m off the bridge.	Farm house locate 20m off the bridge	
	Downstream: Left bank area:	Right bank area:	
	Farm house locate 20m off the bridge	*	
Their views on the project	Access road at right bank is sharply	carved and narrow shingle carriage way,	
Others	difficulty of traffic pass is always fac	ing. Railing is not high enough for pedestrians.	
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:	
Urban area, Farm land, Others	Barren slope bank, flat terrace 6m	Barren slope bank, flat terrace 8m height	
Historic & cultural site, Scenic spo			
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:	
	Barten grass bank and farm yard	Barren slope bank, flat terrace 7m height	
Economy:	Upperstream: Left bank area:	Right bank area:	
Commerce, Agriculture, Forestry	Grassy house yard, agriculture	Agriculture, cattle ranch	
Others	Downstream: Left bank area:	Right bank area:	
	Farm yard, agriculture	Road area, agriculture	
Transport:			
Bus terminal, etc.			
Natural en			
Topography, (Feature of river bank area)		Right bank area:	
Steep slopes, Soft ground, Wetland		Steep slope to flat terrace 8m height	
Sicep stopes, Soft ground, Wettand	Downstream: Left bank area:	Right bank area:	
		Steep slope to flat terrace 7m height	
	6m height.	esteep stope to that terrace 7th height	
Geology, (feature of river bank/bed	Left bank area:	Right bank area:	
Outcrop, stone, gravel, sand / Faul	Sandy loam with rock out crops	Sandy loam with rock out crops	
Soil type, etc.,			
	River bed:		
Walter (Factorial Control	Gravely silt and rocky bed		
Hydrology, (Feature of river flow, Water level, flood level)	1	v at downshed, and flown toward W direction.	
water level, mood level)	Water depth of 2.5m and 0.3m/sec.,		
Fauna & Flora / habitats		Clean water quality. Flood level comes up to 2.0m of existing water level. Deciduous forest of Frontera area vegetation, tall trees mixed. Salix spp.,	
Rare species /community, etc.,		egetation, tall trees mixed. Salix spp., ion fishes, trout and birds species are inhabited.	
The opening tenting the state of the state o	No specific area of importance. Rai		
Poli	tion	o opecios are not recognized	
Complaints:		end of the bridge during the repair period.	
Population of the upmost concern	The state of the s	and or the oriogo doring the topan period.	
Measures taken:	Safety traffic control and safe guard	for the pedestrian passage.	
Institutional measures		tt	
Compensation			
Others			
		•	
· · · · · · · · · · · · · · · · · · ·			

Project location: No. b Bridge name: El Indio Region: IX La Alaucania, Province: Malleco

I	lem Description
Background	Rusting are recognized in some portion on the main steel beam.
	Traffic volume incleases and serious conjection during summer season due to
	natural forest camping site.
	Bridge carriage way and pedestrian width are narrow in comparison to the 7m
	width of connecting road.
Objectives	Repair of damaged portion of the bridge.
	Widen sidewalks for the pedestrian path under the circumstance of summer
	traffic volume.
Executing Agency	Ministry of Public Works (MOP)
Beneficiaries	Maintain smooth and safety traffic flow as well as safe guard of pedestrian path.
Denemarks	intalitiant smooth and safety frante flow as well as safe guard of pedesifian pain.
Project Components	
Existing bridge structure	Slab(RC), Beam(Steel), Abutment(RC), Pier(None), Foundation(Spread foundation
bridge length, width	Length(21.2m), Width(7.6m)
Other specific features	Carriage way width (6.2m), Side walk width (0.7m X 2)
Project Type	() Replacement, (X) Repair
Road Type	()Urban / (X)Rural area, ()Plain area /(X)Mountain area / ()Hilly area
	(X)Paved/()Unpaved
Existing traffic volume	Year 79/7/9 (Wed), (10)Cars/hour, ()Cars/day
Road width/lanes	Exist. Width = (7.0m) Nos. lanes = (2)
Road structure	()Embankment / ()Elevated / (X)Others: Cutting
Supplemental	
facilities	
Others	River name: Indio Tributary of Cautin river
~ ************************************	Road category: S-11-R, Principal road
	The bridge was built in 1985, the road was paved in 1995.
· · · · · · · · · · · · · · · · · · ·	Curacautin is the nearest town off 5 km from the bridge.
	Left bank of downshed area is designated as recreational camping area, traffic
	volume is increased in summer season.

Project location: No. b Bridge name: El Indio Region: IX La Alaucania, Province: Malleco

Iten	}	Description
Social envi	ronment	
Inhabitants:	Upperstream: Left bank area:	Right bank area:
Residents, Indigenous people	None	None
	Downstream: Left bank area:	Right bank area:
	None	None
Their views on the project	Narrow bridge width is critical in co	mparing 7m width of paved load and need
Others	of more width of side walks for sumi	mer season.
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others	Natural riverine forest, flat grass	Natural riverine forest, forested area
Historic & cultural site, Scenic spot	terrace behind.	behind.
Hospitals and other facilities	Downstream: Lest bank area:	Right bank area:
	Natural riverine forest, natural	Natural riverine bush forest and grass
	conservation forest behind.	land behind.
Economy:	Upperstream: Left bank area:	Right bank area:
Commerce, Agriculture, Forestry	Porestry	Forestry
Others	Downstream: Left bank area:	Right bank area:
	Nature recreational camping area	Forestry
Transport:	Access routes to camping site locate	s at left side upper and downstream
Bus terminal, etc.	off 50m from the bridge location.	
Natural en		
Topography, (Feature of river bank	Upperstream: Left bank area:	Right bank area:
area)	Cliff bank of 2m high and flat top	Steep slope continues to hilly area.
Steep slopes, Soft ground, Wetland	Part System	
	Downstream: Left bank area:	Right bank area:
	Cliff bank of 2-3m high and flat	Cliff bank of 2-3m high and steep
	hilly area	hillside.
Geology, (feature of river bank/bed)		Right bank area:
	Yellow brown loam soil top with rav	Yellow brown loam soil top with rava
Soil type, etc.,	rock layer	rock layer
	River bed:	
	Stony bed and rock outcrops	
Hydrology, (Feature of river flow,	Flow regime is faster within narrow	water coarse and flown toward NW.
Water level, flood level)	Water depth of 0.7m and 0.5m/sec.	
	Clean water quality. Flood level con	nes up to 2.0m of existing water level.
Fauna & Flora / habitats	· ·	area vegetation, rich natural forest vegetation.
Rare species /community, etc.,		egetated. Common fishes, and birds species
	are inhabited. No specific area of importance. Rare species are not recognized	
Pollu		
Complaints:	Traffic conjestion and safe guard fo	r pedestrian path during recreational season.
Population of the upmost concern		
Measures taken:	Safeguard and information system s	hall be provided during repairing period.
Institutional measures		
Compensation		<u>and the state of </u>
Others		
:		

Project location:

Bridge name: Quillen Region: IX La Alaucania Province: Cautin

Ite	m Description	
Background	Lacking of timber plates on the deck.	
	Railings are generally unstable and some portions are collapsed.	
	A main timber beam portion has been broken.	
	Traffic of heavy loaded tracks is increasing.	
	The state of the s	
Objectives	Repair of damaged portion of the bridge.	
Objectives		
	Maintain of bridge structure against current traffic for heavy loaded trucks.	
	Fulfill of safeguard for pedestrian path of which school and church are located	
	near the bridge.	
·		
Executing Agency	Ministry of Public Works (MOP)	
Beneficiaries	Smooth and safety traffic flow for the vehicle as well as safety pedestrian path.	
Project Components		
Existing bridge structure	Slab(Timber.), Beam(Timber), Abutment(Timber), Pier(Timber),	
bridge length, width		
Other specific features	Foundation(Timber spread foundation) Length (25.9m), Width (3.9m)	
Office specific readules	Carriage way width (2.85 m), Side walk width (0.3m X 2)	
Brainat Turna	() D. () () () () ()	
Project Type	() Replacement, (X) Repair	
Road Type	()Urban / (X)Rural area, ()Plain area / ()Mountain area / (X)Hilly area	
D. Latina de	()Paved / (X)Unpaved	
Existing traffic volume	Year 79/7/9 (Wed), (0) Cars/hour, () Cars/day	
Road width/lanes	Exist. Width = (3.0m) Nos. lanes = (1)	
Road structure	(X)Embankment / ()Elevated / ()Others: Embanked 200m at right bank side	
Supplemental		
facilities		
i		
Others	River name: Quillen, tributary of Cholchol river of Imperial river	
	Road category: Local branch line of S-10,	
la de la companya de	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
	Lautaro is the nearest town off 12km from the bridge.	
<u></u>		

Project location: Bridge name: Quillen Region: IX La Alaucania Province: Cautin

Iten		Description
Social envi		
Inhabitants:	Upperstream: Left bank area:	Right bank area:
Residents, Indigenous people	None	None
		•
	Downstream: Left bank area:	Right bank area:
	None	A farm house on the hillside locates
		120m from the bridge.
Their views on the project	Narrow road width and single bridge	carriage way are facing community
Others	problem for safety traffic.	, , , , , , , , , , , , , , , , , , , ,
Landuse and facilities:	Upperstream: Lest bank area:	Right bank area:
Urban area, Farm land, Others	Natural riverine bush forest	Swampy lowland area
Historic & cultural site, Scenic spot		omanipy to mano area
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:
Hospitals and omet factimes	Natural riverine bush forest and	Natural riverine bush forest and grass
	agricultural area behind.	land behind.
Geonomy	Upperstream: Left bank area:	
Economy:	Agriculture	Right bank area:
Commerce, Agriculture, Forestry	· ·	Agriculture
Others	Downstream: Left bank area:	Right bank area:
	Agriculture	Agriculture
Transport:		
Bus terminal, etc.		
Natural env		
Topography, (Feature of river bank		Right bank area:
area)	1-1.5m height terraced bank to low	Swampy low flat to tender hill slope
Steep slopes, Soft ground, Wetland	flat land.	
	Downstream: Left bank area:	Right bank area:
	1-1.5m height terraced bank to low	Swampy low flat to tender hill slope
	flat land.	
Geology, (feature of river bank/bcd)	•	Right bank area:
Outcrop, stone, gravel, sand / Fault	Sandy loam soil with gravel mixed	Sandy loam soil with gravel mixed
Soil type, etc.,		
	River bed:	
	Sandy loam soil	
Hydrology, (Feature of river flow,	Flow regime is divided in both side	due to islet dune locate uppershed and
Water level, flood level)	flown toward NW direction. Water	depth of 0.8m and 0.3m/sec., flow velocity.
	Clean water quality. Flood level con	mes up to 2.2m of existing water level.
Fauna & Flora / habitats		egetation, bush and tall trees mixed;
Rare species /community, etc.,		ed. Common fishes trout, and plenty birds
		nportance. Rare species are not recognized
Pollu		
Complaints:	No specific complaint	
Population of the upmost concern		
Measures taken:	No necessity	
Institutional measures		
Compensation		
Others		
Others		
	<u> </u>	

Project location: No.99 Bridge name: Poculon Region: IX La Alaucania Province: Cautin

Ite	m Description
Background	Timber main beams have been decayed.
	Most of timber structure of the bridge has been broken and only some of top
	deck plates are kept for temporally single pedestrian passage.
	deck plaies are kept for temporarry single pedestrian passage.
4	Since the bridge has been collapsed, the local load has been closed for any
	vehicles. Only pedestrian path can be functioned with temporally works of repair.
Objectives	Sooner replacement of the bridge has been desired for local vehicle
	transportation as well as smooth vicinity communication.
Executing Agency	Ministry of Public Works (MOP)
Beneficiaries	Re-opening of the local road and smooth transportation through the replaced
	bridge and expecting smooth vicinity communications
	orago and expecting smooth violating communications
Project Components	
Existing bridge structure	Slab(Timber.), Beam(Timber), Abutment(Timber), Pier(Timber),
bridge length, width	Foundation(Spread foundation) Length(31.0m), Width(3.5m)
Other specific features	Carriage way width (Broken), Side walk width (Temporally 0.6m)
Project Type	(X) Replacement, () Repair
Road Type	()Urban / (X)Rural area, ()Plain area /()Mountain area / (X)Hilly area
	()Paved/(X)Unpaved
Existing traffic volume	Year 79/7/7 (Mon), (The road has been closed: 0) Cars/hour, (0) Cars/day
Road width/lanes	Exist Width = (4.0m in total width) Nos. lanes = (1)
Road width failes	Width (3.5 m) Nos. lanes (1)
The day of the same of the sam	
Road structure	(X)Embankment/()Elevated/()Others:
Supplemental	
facilities	
<u> </u>	
Others	River name: Huilio, tributary of Tolten river
	Road categoly: Local branch line of S-60, aggregate surfaced road.
	Timber slab for only pedestrian path has been repaired 1991.
	Teodoro Schmid is the nearest village off 4 km from the bridge.
	recode ochimic is the hearest vinage off 4 kin from the bridge.
-	

Project location: No.99 Bridge name: Poculon Region: IX La Alaucania Province: Cautin

Iter	n	Description
Social envi	ronment	
Inhabitants:	Upperstream: Left bank area:	Right bank area:
Residents, Indigenous people	None	None
	· .	
	Downstream: Left bank area:	Right bank area:
	None	A farm house in 100m off the bridge.
		1
Their views on the project	Closed traffic due to collapse of the	bridge.
Others		
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others	Farm land, maize	Farm land, maize
Historic & cultural site, Scenic spot		
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:
	Farm land, maize	Farm land, maize
	ann and, marzo	i ani iano, maizo
Economy:	Upperstream: Left bank area:	Right bank area:
Commerce, Agriculture, Forestry	Agriculture	Agriculture
Others	Downstream: Left bank area:	Right bank area:
	Agriculture	Agriculture
Transport:	None	[rightenitate
Bus terminal, etc.	Thome	
Natural en	ironment	
Topography, (Feature of river bank		Right bank area:
arca)		Steeply slope bank and flat terraced top
Steep slopes, Soft ground, Wetland		occopy slope bank and hacterfaced top
	Downstream: Left bank area:	Right bank area:
		Steeply slope bank and flat terraced top
	low lying farm land	blooply stope cank and hat tendeed top
Geology, (feature of river bank/bed)		Right bank area:
Outcrop, stone, gravel, sand / Fault		Gravely silt brawn soil
Soil type, etc.,		oravery on oravisson
4	River bed:	
	Silt soil deposit	
Hydrology, (Feature of river flow,		and down shed near off the bridge with WSW
Water level, flood level)		sme. Water depth of 2.0m and 0.15m/sec. flow
		omes up to level of near free board of the brid
Fauna & Flora / habitats		egetation, natural forest vegetation grows
Rare species /community. etc.,		mon fish fauna and plenty species of bird.
	No specific area of importance. Rar	
Poliu		· ····································
Complaints:		the replacement slightly affects farm land
Population of the upmost concern	acquisition.	and any authors to the land
Measures taken:		considered if the bridge location to be affected
Institutional measures		
Compensation		
Others		
· · · · · · · · · · · · · · · · · · ·		
	<u> </u>	

Project location: No.86 Bridge name: Malleco Region: IX La Alaucania, Province: Malleco

	em Description
Background	Wooden superstructure has been burnt recently, MOP has started repair
	of the superstructure.
	Concrete honey combing and cracks are recognized on the left bank abutment.
	Safety pedestrian path requires against increase of traffic of heavy gravel
	loaded ,timber loaded trucks.
Objectives	Repair of damaged portion of sub-structure of the bridge.
•	Widen sidewalks for the pedestrian path under the circumstance of summer traff
:	volume
P	
Executing Agency	Ministry of Public Works (MOP)
Beneficiaries	Maintain smooth and safety traffic flow as well as safe guard of pedestrian
	path.
Project Components	
roject Components	
Existing bridge structure	Slab(Timber), Beam(Timber), Abutment(timber), Pier(Timber),
bridge length, width	Foundation(Spread foundation), Length (92.0m), Width (m)
Other specific features	Carriage way width (3.0 m), Side walk width (0.3 m X 2)
Project Type	() Replacement, (X) Repair
Road Type	(Michael (V) Dural occo (V) Distriction () March ()
	()Urban / (X)Rural area, (X)Plain area / ()Mountain area / (X)Hilly area
Existing traffic volume	()Paved/(X)Unpaved
Calsting traffic volume	Year 79/7/10 (Thr), (0) Cars/hour, () Cars/day
D. I 141 d	Road has been closed due to burning of the bridge on May in 1997.
Road width/lanes	Exist. Width = (4.6m) Nos. lanes = (2)
Road structure	(X)Embankment/()Elevated/: Embanked 15m at left, 40m at right bank
Supplemental	Railway bridge is closer located adjacent to the bridge at downstream.
facilities	one by the store reduced adjacent to the bridge at downsitedin.
Others	
Juiet 2	River name: Malleco
	Road: Local branch licne of R-86,
	The bridge has been burned left bank portion on February 1997.
	Angol is the nearest town off 1.0km from the bridge.

Project location: No.86 Bridge name: Malleco Region: IX La Alaucania, Province: Malleco

Item		Description
Social envir	ronment	
Inhabitants: Residents, Indigenous people	Upperstream: Left bank area: Temporally hatches locate at 30m	Right bank area: None
	off the bridge. Downstream: Left bank area: None	Right bank area: None
Their views on the project Others	Since the bridge burned and collaps And long way of 10km distance is r	
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others Historic & cultural site, Scenic spot	Barren riverine land, farm yard on t	
Hospitals and other facilities	Downstream: Left bank area: Cattle ranch	Right bank area: Swampy low land, cattle ranch
Economy:	Upperstream: Left bank area:	Right bank area:
Commerce, Agriculture, Forestry	Agriculture,	Agriculture
Others	Downstream: Left bank area:	Right bank area:
	Agriculture,	Agriculture
Transport: Bus terminal, etc.		
Natural env		Int san a
Topography, (Feature of river bank area)	Steep slope to 6m terrace	Right bank area: Slight slope to low laying terrain
Steep slopes, Soft ground, Wetland	Downstream: Left bank area:	Right bank area:
	Tender slope continues	Slight slope to low laying terrain
Geology, (feature of river bank/bed)	Left bank area:	Right bank area:
		Dark silt sand soil with gravel mixed
	River bed: Silt sand bed	
Hydrology, (Feature of river flow,	Flow regime is sifted right bank sid	le, and flown toward SW direction.
Water level, flood level)	Water depth of 1.5m and 0.2m/sec	
	Turbid water quality. Flood level c	omes up to 2.0m of existing water level.
Fauna & Flora / habitats	Well grown riverine vegetation and	I tall trees mixed; Deciduous trees, Salix
Rare species /community, etc.,	No specific area of importance. Ra	n fishes, and birds species are inhabited. are species are not recognized
Pollu		
Complaints: Population of the upmost concern	No specific items	
Measures taken:	No specific items	
Institutional measures Compensation		
Others		

Project location: No.69 Bridge name: Mira Flores Region: IX La Alaucania, Province: Malleco

Ita	em Description
Background	Timbers of the deck are lacking in some portions.
	Bolts at joint portions of main beam and deck are lacked.
	Wooden retaining wall at the abutment wings decayed and lacked.
	Depression at the road behind abutment are generated.
	Timber bridge has no longer maintained, many portions have to be repaired.
	Heavy loaded truck's traffic gives continuous damage to the bridge structure.
Objectives	Rehabilitation of damaged portion of the bridge.
Objectives	Widen sidewalks for the pedestrian path.
	Abatement and structural strengthen is the most urgent requirement for rehabilitation
Executing Agency	Ministry of Public Works (MOP)
Beneficiaries	Maintain smooth and safety traffic flow as well as safe guard of pedestrian path
Project Components	
Existing bridge structure	Slab(Timber), Beam(Timber), Abutment(Timber), Pier(Timber),
bridge length, width	Foundation(Timber spread foundation) Length (14.4m), Width (m)
Other specific features	Carriage way width (2.3m), Side walk width (0.3m X 2)
Project Type	() Replacement. (X) Repair
Project Type Road Type	() Replacement, (X) Repair () Urban / (X) Rural area () Plain area / () Mountain area / (X) Hilly area
Project Type Road Type	()Urban / (X)Rural area, ()Plain area / ()Mountain area / (X)Hilly area
Road Type	()Urban/(X)Rural area, ()Plain area/()Mountain area/(X)Hilly area ()Paved/(X)Unpaved
	()Urban/(X)Rural area, ()Plain area/()Mountain area/(X)Hilly area
Road Type Existing traffic volume	()Urban / (X)Rural area, ()Plain area / ()Mountain area / (X)Hilly area ()Paved / (X)Unpaved Year 79/7/10 (Thr), (4)Cars/hour, ()Cars/day
Road Type	()Urban/(X)Rural area, ()Plain area/()Mountain area/(X)Hilly area ()Paved/(X)Unpaved
Road Type Existing traffic volume Road width/lanes	()Urban/(X)Rural area, ()Plain area/()Mountain area/(X)Hilly area ()Paved/(X)Unpaved Year 79/7/10 (Thr), (4)Cars/hour, ()Cars/day Exist. Width = (2.9m) Nos. lanes = (1)
Road Type Existing traffic volume Road width/lanes Road structure	()Urban / (X)Rural area, ()Plain area / ()Mountain area / (X)Hilly area ()Paved / (X)Unpaved Year 79/7/10 (Thr), (4)Cars/hour, ()Cars/day
Road Type Existing traffic volume Road width/lanes Road structure Supplemental	()Urban/(X)Rural area, ()Plain area/()Mountain area/(X)Hilly area ()Paved/(X)Unpaved Year 79/7/10 (Thr), (4)Cars/hour, ()Cars/day Exist. Width = (2.9m) Nos. lanes = (1)
Road Type Existing traffic volume Road width/lanes Road structure	()Urban / (X)Rural area, ()Plain area / ()Mountain area / (X)Hilly area ()Paved / (X)Unpaved Year 79/7/10 (Thr), (4)Cars/hour, ()Cars/day Exist. Width = (2.9m) Nos. lanes = (1)
Road Type Existing traffic volume Road width/lanes Road structure Supplemental	()Urban / (X)Rural area, ()Plain area / ()Mountain area / (X)Hilly area ()Paved / (X)Unpaved Year 79/7/10 (Thr), (4)Cars/hour, ()Cars/day Exist. Width = (2.9m) Nos. lanes = (1)
Road Type Existing traffic volume Road width/lanes Road structure Supplemental facilities	()Urban/(X)Rural area, ()Plain area/()Mountain area/(X)Hilly area ()Paved/(X)Unpaved Year 79/7/10 (Thr), (4)Cars/hour, ()Cars/day Exist. Width =(2.9m) Nos. lanes = (1) (X)Embankment/()Elevated/()Others: Embanked 10m at both sides
Road Type Existing traffic volume Road width/lanes Road structure Supplemental	()Urban/(X)Rural area, ()Plain area/()Mountain area/(X)Hilly area ()Paved/(X)Unpaved Year 79/7/10 (Thr), (4)Cars/hour, ()Cars/day Exist. Width = (2.9m) Nos. lanes = (1) (X)Embankment/()Elevated/()Others: Embanked 10m at both sides River name: Rehue river
Road Type Existing traffic volume Road width/lanes Road structure Supplemental facilities	()Urban/(X)Rural area, ()Plain area/()Mountain area/(X)Hilly area ()Paved/(X)Unpaved Year 79/7/10 (Thr), (4)Cars/hour, ()Cars/day Exist. Width =(2.9m) Nos. lanes = (1) (X)Embankment/()Elevated/()Others: Embanked 10m at both sides
Road Type Existing traffic volume Road width/lanes Road structure Supplemental facilities	()Urban/(X)Rural area, ()Plain area/()Mountain area/(X)Hilly area ()Paved/(X)Unpaved Year 79/7/10 (Thr), (4)Cars/hour, ()Cars/day Exist. Width = (2.9m) Nos. lanes = (1) (X)Embankment/()Elevated/()Others: Embanked 10m at both sides River name: Rehue river
Road Type Existing traffic volume Road width/lanes Road structure Supplemental facilities	()Urban/(X)Rural area, ()Plain area/()Mountain area/(X)Hilly area ()Paved/(X)Unpaved Year 79/7/10 (Thr), (4)Cars/hour, ()Cars/day Exist. Width = (2.9m) Nos. lanes = (1) (X)Embankment/()Elevated/()Others: Embanked 10m at both sides River name: Rehue river
Road Type Existing traffic volume Road width/lanes Road structure Supplemental facilities	()Urban/(X)Rural area, ()Plain area/()Mountain area/(X)Hilly area ()Paved/(X)Unpaved Year 79/7/10 (Thr), (4)Cars/hour, ()Cars/day Exist. Width = (2.9m) Nos. lanes = (1) (X)Embankment/()Elevated/()Others: Embanked 10m at both sides River name: Rehue river
Road Type Existing traffic volume Road width/lanes Road structure Supplemental facilities	()Urban/(X)Rural area, ()Plain area/()Mountain area/(X)Hilly area ()Paved/(X)Unpaved Year 79/7/10 (Thr), (4)Cars/hour, ()Cars/day Exist. Width = (2.9m) Nos. lanes = (1) (X)Embankment/()Elevated/()Others: Embanked 10m at both sides River name: Rehue river

Project location: No.69 Bridge name: Mira Flores Region: IX La Alaucania, Province: Malleco

Iten		Description
Social envi		
Inhabitants:	Upperstream: Left bank area:	Right bank area:
Residents, Indigenous people	None	None
	Downstream: Left bank area:	Right bank area:
	None	None
a de la companya de		
Their views on the project	Narrow single carriage width is critic	cal for heavy truck's traffic.
Others		
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others	Barren river bank, road and railway	Natural riverine swamp forest, forested area
Historic & cultural site, Scenic spot		behind.
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:
riospitois and onice (dentities		forestation and forested area
÷	behind	lorestation and Torested area
Peanone	Upperstream: Left bank area:	Right bank area:
Economy:		
Commerce, Agriculture, Forestry	road, railway space, forestry hill are	· · · · · · · · · · · · · · · · · · ·
Others	Downstream: Left bank area:	Right bank area:
	Forestry, cattle ranch	Forestry
Transport:	Bus depot at 50m from the bridge or	n left bank of downshed.
Bus terminal, etc.	the bridge location.	
Natural en		
Topography, (Feature of river bank	Upperstream: Left bank area:	Right bank area:
area)	Low swampy land to tender slope	Tender slope with low terrace to hillside
Steep slopes, Soft ground, Wetland		
	Downstream: Left bank area:	Right bank area:
	Tender slope continue to low terrace	Low terraced bank with 1.0m high to hilly
	area	slope
Geology, (feature of river bank/bed)	Left bank area:	Right bank area:
Outcrop, stone, gravel, sand / Fault		Silt sand layer and gravel mixed
Soil type, etc.,	one band layer and graver minus	and some tayou and graves and the
Son typo, etc.,	River bed:	
	Silt sandy bed	
Hydrology, (Feature of river flow,	Flow regime is even flown toward I	WW direction
Water level, flood level)		
water ievel, flood level	Water depth of 1.0m and 0.3m/sec.,	
The sea O File of the State		omes up to 1.5m of existing water level.
Fauna & Flora / habitats		ea vegetation, tall trees mixed; Eucaliputus sp
Rare species /community, etc.,		fishes, and birds species are inhabited.
	No specific area of importance. Rai	re species are not recognized
Polls		
Complaints:	No specific items	
Population of the upmost concern		
	No specific items	
Measures taken:		
Measures taken: Institutional measures		
Institutional measures		
Institutional measures Compensation		
Institutional measures		

Project location: No.40 Bridge name: San Juan Region: IX La Alaucania Province: Cautin

Ite	n Description
Background	Timber bridge has been damaged and spoiled at many portions, it is serious
	to keep maintain the bridge as it is now.
	Traffic of heavy loaded trucks for timbers and cattle gives continuous
	damage to the bridge structure,
	Bridge vicinity is populated area, hospital and several schools are located in this
ONI-M	area. Safeguard of many pedestrians pass is most urgently required.
Objectives	Replacement of the bridge.
	Double carriage lane with enough width of sidewalks are required for replacement
	of the bridge.
Executing Agency	Ministry of Public Works (MOP)
Beneficiaries	Maintain smooth and safety traffic flow as well as safe guard of pedestrian path
Project Components	
Existing bridge structure	Clob/Pinhay Dans/Pinhay Abutans/Pinhay Dis/Pinhay Carly
_	Slab(Timber), Beam(Timber), Abutment(Timber), Pier(Timber, Steel),
bridge length, width	Foundation(Timber spread foundation) Length (31.5m), Width (4.8m)
Other specific features	Carriage way width (2.8m), Side walk width (0.4m X 2)
Project Type	(X) Replacement, () Repair
Road Type	(X) Urban / () Rural area, (X) Plain area / () Mountain area / () Hilly area
	()Paved / (X)Unpaved
Existing traffic volume	Year 79/7/10 (Thr), (50)Cars/hour, ()Cars/day
Road width/lanes	Exist. Width = (7.0m) Nos. lanes = (2)
Road structure	(X)Embankment / ()Elevated / ()Others: Embanked 15m at both sides
Supplemental	Portable water pipe line is installed uppershed adjacent to the bridge.
facilities	restante water pipe into is thistatica appersized adjacent to the offege.
tuenintos :	
Othors	
Others	River name: San Juan, sub-tributary of El Peral river, Tributary of Moncul
e e	Road category: Principal road P-70, principal road
	Bridge locates in town of Trovolhue
·	Detour road and bridge locate 1.0km downstream of the bridge.
	Location of the replacement is the same site as it is now.

Project location: No.40 Bridge name: San Juan Region: IX La Alaucania, Province: Cautin

Iten		Description
Social envi		
Inhabitants:	Upperstream: Left bank area:	Right bank area:
Residents, Indigenous people	Residential houses 60m off the	Several residential houses 40m off the
	bridge	bridge.
	Downstream: Left bank area:	Right bank area:
	Many residential houses 15m off	Some residential houses 15m off the bridge.
	the bridge.	
Their views on the project	Narrow single carriage width is critic	cal for heavy truck's traffic and many
Others	pedestrians passing.	
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others	Barren grass area, residential behind	Barren grass area, residential behind.
Historic & cultural site, Scenic spot		
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:
	Barren grass area, residential behind	Barren grass area, residential behind.
Economy:	Upperstream: Left bank area:	Right bank area:
Commerce, Agriculture, Forestry	Residential	Residential
Others	Downstream: Left bank area:	Right bank area:
	Residential	Residential
Transport:	Bus depots at town street near off 50	Im from the bridge at left bank at downshed.
Bus terminal, etc.		
Natural en	ironment	
Topography, (Feature of river bank	Upperstream: Left bank area:	Right bank area:
area)	Moderate slope to flat top area	Steep bank to low terraced area
Steep slopes, Soft ground, Wetland		
	Downstream: Left bank area:	Right bank area:
	Moderate slope to flat top area	Steep bank to low terraced swampy area
Geology, (feature of river bank/bed)	Left bank area:	Right bank area:
Outcrop, stone, gravel, sand / Fault	Sand silt soil	Sand silt soil
Soil type, etc.,		
	River bed:	
	Sand silt soil	
Hydrology, (Feature of river flow,	Flow regime is rather sifted right ba	nk side flown toward SW direction.
Water level, flood level)	Water depth of 2.3m and 0.1m/sec.,	
,		omes up to 1.0m of existing water level.
Fauna & Flora / habitats	Deciduous forest of Concepcion are	
Rare species /community, etc.,	Common fishes, and birds species a	
	No specific area of importance. Rar	
Pollu		y v
Complaints:	Temporally traffic close on the brid	ge point.
Population of the upmost concern		O-1
Measures taken:	Location of replacement is recomm	ended at the same existing location due to
Institutional measures	•	and compensation. Safety system of traffic flow
Compensation	to the detour road and bridge.	compensations outery system of matter flow
Others	to the detout tous end onege.	
Outus		
	<u> </u>	

Project location: No.32 Bridge name: Medina Region: IX La Alaucania Province: Cautin

Iter	n Description
ackground	Lacking of timber plates on the deck.
	Many honey combing of concrete on the left bank abutment are recognized.
	Heavey loaded trucks for timber transportation is the main traffic.
bjectives	Repair of damaged portion of the bridge.
xecuting Agency	Ministry of Public Works (MOP)
eneficiaries	Smooth and safety traffic flow.
roject Components	
Existing bridge structure	Slab(Timber.), Beam(Steel), Abutment(RC), Pier(RC),
bridge length, width	Foundation(Spread foundation), Length(170.0m), Width(5.0m)
Other specific features	Carriage way width (3.05 m), Side walk width (0.45m X 2)
Project Type	() Replacement, (X) Repair
Road Type	()Urban / (X)Rural area, (X)Plain area / ()Mountain area / ()Hilly area
	()Paved / (X)Unpaved
Dulatia Assetta	·
Existing traffic volume	Year 79/7/8 (Tue), (5) Cars/hour, () Cars/day
Road width/lanes	Exist. Width $=(3.5 \text{m})$ Nos. lanes $=(1)$
Road structure	(X)Embankment/()Elevated/()Others; Embanked 20m at Left bank
Supplemental	Electric transmission concrete pole is situated at gravel deposit in the center of
facilities	upper river course.
L	Discounties and the contract of the contract o
Others	River name: Llaima, sub-tributary of Allipin river of main river of Tolten
	Road category: Local branch line of S-61, aggregate surfaced road.
· ·	National park, Congullio Los Paragus is located 6km uppershed direction from
	the bridge.
	the bridge. Melipeuco is the nearest town off 16.4 km from the bridge.

Project location: No.32 Bridge name: Medina Region: IX La Alaucania Province: Cautin

Item Description				
Social envi				
Inhabitants:	Upperstream: Left bank area:	Right bank area:		
Residents, Indigenous people	None	Small hut located off 50m of the bridge.		
		Right bank area:		
	Farm house located 20m off the brid	None (Farm house at 200m off the bridge.)		
Their views on the project		ridge carriage way are facing community		
Others	problem for heavy loaded truck's trai			
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:		
Urban area, Farm land, Others	Farm land, cattle ranch	Natural forested land at riverside and		
Historic & cultural site, Scenic spot		farm land behind		
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:		
	Natural forested land at riverside and	Natural forested land at riverside and		
	farm garden behind.	farm land behind		
Economy:	Upperstream: Left bank area:	Right bank area:		
Commerce, Agriculture, Forestry	Agriculture	Agriculture		
Others	Downstream: Left bank area:	Right bank area:		
	Agriculture	Agriculture		
Transport:	Bus depot at 80m of the bridge in up			
Bus terminal, etc.	Bus depot at control the offage in up	persied of ferr bank		
Natural en	imanmant			
Topography, (Feature of river bank		Right bank area:		
area)	Flat to 2 - 3 m high terraced bank	l T		
1	•	Steeply slope bank and 3-4m flat terraced		
Steep slopes, Soft ground, Wetland	continues to the top flat area. Downstream: Left bank area:	top		
		Right bank area:		
	Flat to 2 - 3 m high terraced bank	Steeply slope bank and 3-4m flat terraced		
	continues to the top flat area.	top		
Geology, (feature of river bank/bed)	1	Right bank area:		
Outcrop, stone, gravel, sand / Fault	Sandy loam dark brawn soil	Sandy loam dark brawn soil		
Soil type, etc.,				
	River bed:			
	Round gravel and sand deposit			
Hydrology, (Feature of river flow,		k to the center and shifts down to right bank		
Water level, flood level)		allow water. Water depth of 2.0m and 0.3m/se		
	flow velocity. Flood level comes up			
Fauna & Flora / habitats	Deciduous forest of Andes-Bio-Bio	area vegetation, bush and tall trees mixed,		
Rare species /community, etc.,	Quercus, Salix spp. Pinus spp. vege	tated. Common fishes and birds species,		
	rabbits are many. No specific area of	of importance. Rare species are not recognized		
Poliu	ition			
Complaints:	No specific complaint			
Population of the upmost concern				
Measures taken:	No necessity			
Institutional measures				
Compensation	1			
<u> </u>				
()iners				
Others				

Project location: No.88 Bridge name: Cautin Region: IX. La Alaucania, Province: Cautin

Background	m Description
	Rusting cover all way on the main steel beam.
	Many honey combing of concrete on the right bank abutment are recognized.
	, , , , , , , , , , , , , , , , , , ,
	Safety pedestrian path requires against increase of traffic of heavy gravel
	loaded , timber loaded trucks.
Objectives	Repair of damaged portion of the bridge.
	Widen sidewalks for the pedestrian path under the circumstance of summer
	traffic volume.
	marile folding.
Evenuting Agency	Midw. CRIV W 1 O(CR)
Executing Agency Beneficiaries	Ministry of Public Works (MOP)
Denenciaries	Maintain smooth and safety traffic flow as well as safe guard of pedestrian
	path.
	Managery and the state of the control of the state of the control of the contr
Project Components	
Existing bridge structure	Slab(Timber), Beam(Steel), Abutment(RC), Pier(RC),
bridge length, width	Foundation(Spread foundation), Length(39.4m), Width(4.5m)
Other specific features	Carriage way width (3.85m), Side walk width (0.3m X 2)
Project Type	() Replacement, (X) Repair
Road Type	()Urban / (X)Rural area, ()Plain area / ()Mountain area / (X)Ililly area
	(X)Paved/()Unpaved
Existing traffic volume	Year 79/7/9 (Wed), (12) Cars/hour, () Cars/day
, •	
Road width/lanes	Exist. Width $=(3.2m)$ Nos. lanes $=(1)$
	(2)
Road structure	(X)Embankment/()Elevated/()Others: Embanked 20m at left bank
Supplemental	(11) Dievated () Dievated () Offices. Entitlatined 20th at left bank
facilities	
Others	River name: Cautin river
Officis	
	Road category: Local branch licne of R-89, aggregate road
	The bridge was built in 1972,
	National park Conguillio Los Praguas is located 12km at uppershed.
	Curacautin is the nearest town off 13 km from the bridge.

Project location: No.88 Bridge name: Cautin Region: IX La Alaucania Province: Cautin

ltem	Description	
Social envir	onment	
Inhabitants:		Right bank area:
Residents, Indigenous people	None	None
	Downstream: Left bank area:	Right bank area:
	None	2 farm houses at 30-40m off the bridge.
Their views on the project	Narrow single carriage width is critic	L cal for heavy aggregate loaded trucks.
Others	Single log laying sidewalk is always	threaten for pedestrian when vehicle pass.
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others	- 	Natural riverine forest, forested area behind
Historic & cultural site, Scenic spot		0.0
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:
	Natural riverine area and meadow	Natural riverine forest and forested area
	behind	behind.
Economy:	Upperstream: Left bank area:	Right bank area:
Commerce, Agriculture, Forestry	Forestry	Forestry
Others	Downstream: Left bank area:	Right bank area:
	Porestry, cattle ranch	Forestry
Transport:	Bus depot at 50m from the bridge or	
Bus terminal, etc.	the bridge location.	
Natural env		
Topography, (Feature of river bank		Right bank area:
area)	Tender slope continue to hillside	Steep slope continue to hillside
Steep slopes, Soft ground, Wetland	Tender stope continue to misses	Stop clope commune to innoise
bicep stopes, con ground, wending	Downstream: Left bank area:	Right bank area:
	5	Terraced bank with 1.5m high to hilly area
	Tender stope continue to ton may e	and the same of th
Geology, (feature of river bank/bed)		Right bank area:
Outcrop, stone, gravel, sand / Fault	Dark silt sand layer and gravel mixe	Dark silt sand layer and gravel mixed
Soil type, etc.,	sub-course	sub-course
	River bed:	
	Sandy bed and rock outcrops	
Hydrology, (Feature of river flow,	Flow regime is sifted right bank sid	le, and flown toward SSW direction.
Water level, flood level)	Water depth of 0.5-0.8m and 0.5m/	sec., flow velocity.
1	1	mes up to 2.0m of existing water level.
Fauna & Flora / habitats	Deciduous forest of Andes-Bio-Bio	
Rare species /community, etc.,	The state of the s	ed. Common fishes, and birds species are
, , , , , , , , , , , , , , , , , , , ,	,	ortance. Rare species are not recognized
Pollu		
Complaints:	Safe guard for pedestrian path when	n heavy loaded truck pass.
Population of the upmost concern		
Measures taken:	Safeguard and information system :	shall be provided during repairing period.
Institutional measures		- , · · ·
Compensation	•	
Others		
••		
· · · · · · · · · · · · · · · · · · ·		

Project location: No.24 Bridge name: Salva Tu Alma Region: IX La Aiaucania, Province: Cautin

Ite:	n Description		
Background	Lacking of timber plates on the deck.		
	Railings are generally unstable and some portions are collapsed.		
	Rusting cover all way on the main steel beam. Connection joints of the main beam		
	are utilized with steel bars.		
	Right bank abutment exposes many honey combing, and plane concrete structure.		
	Traffic of heavy loaded tracks is increasing.		
N. t. att			
Objectives	Repair of damaged portion of the bridge.		
	Maintain of bridge structure against current traffic for heavy loaded trucks.		
	Fulfill of safeguard for pedestrian path of which school and church are located		
	near the bridge.		
Executing Agency	Ministry of Public Works (MOP)		
Beneficiaries	Smooth and safety traffic flow for the heavy loaded trucks as well as daily		
	school children's' pedestrian path.		
Project Components			
Existing bridge structure	Slab(Timber.), Beam(Steel), Abutment(RC), Pier(RC),		
bridge length, width	Foundation(Spread foundation), Length (40.7m), Width (3.6m)		
Other specific features			
Other specific readures	Carriage way width (2.6 m), Side walk width (0.4m X 2)		
Paris of Trans	(\n) 1 2 2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		
Project Type	() Replacement, (X) Repair		
Road Type	() Urban / (X) Rural area, () Plain area / (X) Mountain area / () Hilly area		
:	()Paved/(X)Unpaved		
Existing traffic volume	Year 79/7/8 (Tue.), (12) Cars/hour, () Cars/day		
Road width/lanes	Exist. Width = $(3.0m)$ Nos. lanes = (1)		
Road structure	(X)Embankment/()Elevated/()Others: Embanked 20m at both sides		
Supplemental			
facilities			
Others	River name: Pedoregos, tributary of Tolten river		
	Road category: Local branch line of S-65, aggregate surfaced road.		
	Troud value of 1. Local oralical file of 5-05, aggregate suffaced load.		
	Constitute Thellistics is bessed film on the Life Constitution in Land		
	Small lake, Huilipilun is located 2km uppershed direction from the bridge.		
· `.	Village settlement Queihue is located 500m uppershed area.		
t e e e e e e e e e e e e e e e e e e e	Villarrica is the nearest town off 16.5 km from the bridge.		

Project location: No.24 Bridge name: Salva Tu Alma Region: IX La Alaucania, Province: Cautin

Item Description					
Social environment					
Inhabitants:	Upperstream: Left bank area:	Right bank area:			
Residents, Indigenous people	None	2 farm houses locates 15 - 20 from the river			
		edge. Primary school, church at 80-100m			
The state of the s	Downstream: Left bank area:	Right bank area:			
	None	None			
Their views on the project	Narrow road width and single bridge	e carriage way are facing community problem			
Others	for traffic of sand and gravel loaded				
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:			
Urban area, Farm land, Others	Forest area	Residential area: School and church			
Historic & cultural site, Scenic spot		focate at 80 -100m from the bridge.			
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:			
	Cattle ranch and farm yard.	Forest area			
to the production of the second of the second					
Economy:	Upperstream: Left bank area:	Right bank area:			
Commerce, Agriculture, Forestry	Agriculture, forestry	Agriculture, forestry			
Others	Downstream: Left bank area:	Right bank area:			
	Agriculture, forestry	Agriculture, forestry			
Transport:	Bus depot at 80m of the bridge in d				
Bus terminal, etc.					
Natural en	ironment	· · · · · · · · · · · · · · · · · · ·			
Topography, (Feature of river bank	Upperstream: Left bank area:	Right bank area:			
area)	2 - 3 m high terraced bank	Tender slope bank			
Steep slopes, Soft ground, Wetland					
	Downstream: Left bank area:	Right bank area:			
	2 - 3 m high terraced bank	Tender slope bank			
1					
Geology, (feature of river bank/bed)	Left bank area:	Right bank area:			
Outcrop, stone, gravel, sand / Fault	Gravely loam dark brawn soil	Gravely loam dark brawn soil			
Soil type, etc.,					
	River bed:				
	Round gravely bed with rock outcre	ops			
Hydrology, (Feature of river flow,	Flow regime is equally spread flow				
Water level, flood level)	Water depth of 0.8m and 0.5m/sec.	, flow velocity. Clean water quality.			
	Flood level comes up to 2m of ex	• •			
Fauna & Flora / habitats		area vegetation, bush and tall trees mixed,			
Rare species /community, etc.,	Quercus, Salix, Pinus spp. are vege	etated. Common fishes trout, and birds species			
	are plenty. No specific area of impo	ortance. Rare species are not recognized			
Poliu	tion				
Complaints:	No specific complaint				
Population of the upmost concern					
Measures taken:	No necessity				
Institutional measures					
Compensation					
Others	1 1 1				

Project location: No. d Bridge name: Quinchilca Region: X Los Lagos, Province: Valdiva

Iten	n Description		
Background	Exposure of steel bars on the side walks deck is observed.		
	Flaking, lacking and concrete honey combing on the deck surface are recognized.		
	Cracks on the main concrete beam are recognized.		
	A supporting portion of the main beam collapse by heavy compression.		
	Cracks on the abutments are recognized.		
	on the double and recognized.		
Objectives	Repair damaged portion of the bridge.		
	Maintain smooth and safety traffic flow and pedestrian passage.		
	realitation of the safety trainer for and peopsitian passage,		
Executing Agency	Ministry of Public Works (MOP)		
Beneficiaries	Maintain smooth and safety traffic flow as well as safe guard of pedestrian path		
Dentification	artainani shiooni and safety traine now as well as safe guald of pedestrian pari		
Project Components			
Existing bridge structure	Clab (BC) Boom (BC) Abutmant (BC) Bio (BC) Boom Late (Company)		
	Slab(RC), Beam(RC), Abutment(RC), Pier(RC), Foundation(Spread foundation)		
bridge length, width	Length (143.5m), Width (6.5m)		
Other specific features	Carriage way width (4.8m), Side walk width (0.85m X 2)		
Duniant Trun	(\ Parlesses (V) Paris		
Project Type	() Replacement, (X) Repair		
Road Type	()Urban / (X)Rural area, (X)Plain area / ()Mountain area / ()Hilly area (X)Paved / ()Unpaved		
Existing traffic volume	Year 79/7/11 (Fri.), (70)Cars/hour, ()Cars/day		
	The second of th		
Road width/lanes	Exist. Width = (7.0m) Nos. lanes = (2)		
Road structure	(X)Embankment/()Elevated: Embanked at all right bank, 30m at left bank		
Supplemental	Gabions which constructed in 1981are installed uppershed of both bank.		
facilities			
Others	River name: Quinchilea, sub-sub tributary of San Pedro, Sub-tributary of Callecalle		
	tributary of Valdiva river.		
	Road : Principal road I-39, principal road		
	The bridge was constructed in 1930's		
	Los Lagos is the nearest town apart 5km from the bridge.		
	Sport fishing is popular in summer November to May.		
	B. E.L State of the state		

Project location: No.d Bridge name: Quinchilca Region: X Los Lagos, Province: Valdiva

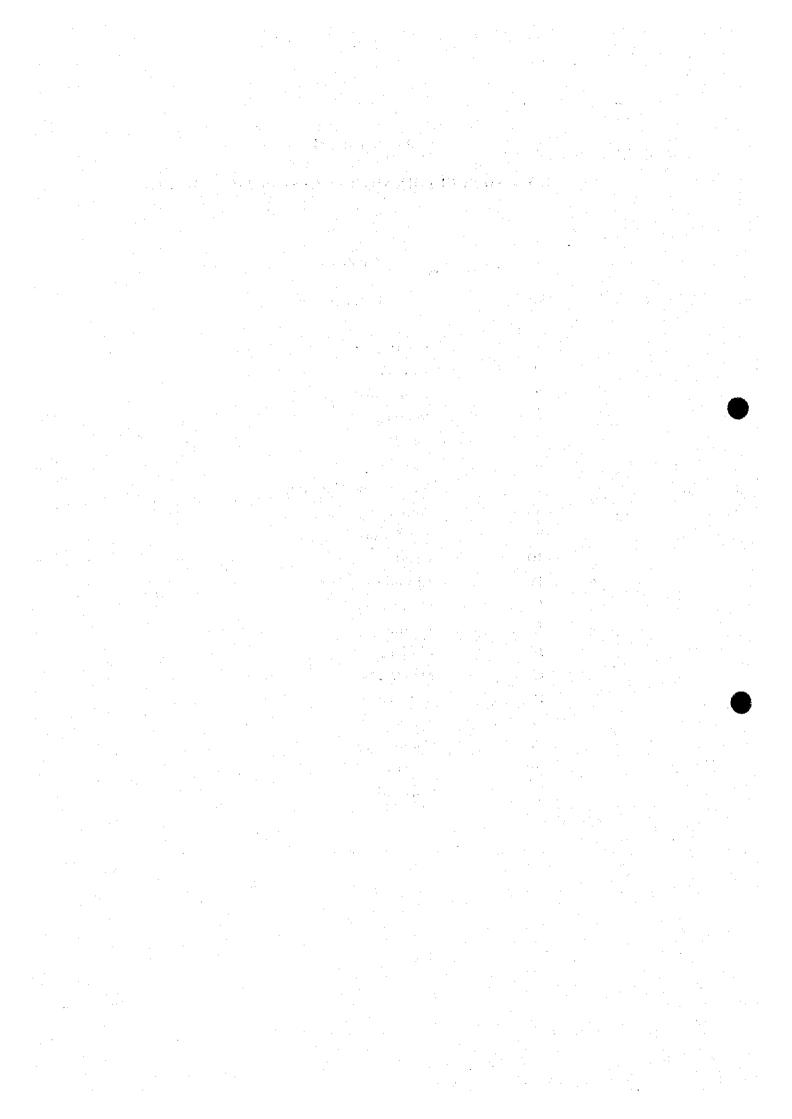
<u> </u>	<u> </u>	Description
Social envir	the state of the s	
nhabitants:	Upperstream: Left bank area:	Right bank area:
Residents, Indigenous people	A farm house locates 40m off the bridge.	None
•	-	Right bank area:
		A farm house locates 20m off the bridge
Their views on the project		
Others		
Landuse and facilities:	Upperstream: Left bank area:	Right bank area:
Urban area, Farm land, Others	Barren grass area	Barren grass area, cattle ranch behind.
Historic & cultural site, Scenic spot		
Hospitals and other facilities	Downstream: Left bank area:	Right bank area:
•	Barren grass area, cattle ranch	Barren grass area, cattle ranch
Economy:	Upperstream: Left bank area:	Right bank area:
Commerce, Agriculture, Forestry	Agriculture, cattle ranch	Agriculture, cattle ranch
Others	Downstream: Left bank area:	Right bank area:
· · · · · · · · · · · · · · · · · · ·	Agriculture, cattle ranch	Agriculture, cattle ranch
Transport:		
Bus terminal, etc. Natural env	ironment	· · · · · · · · · · · · · · · · · · ·
Topography, (Feature of river bank		Right bank area:
area)	Moderate slope to low land, area of	, · · · · · · · · · · · · · · · · · · ·
Steep slopes, Soft ground, Wetland	hilltop locates behind	Gabion installation on the bank
Steep stopes, ook ground, wertains	Downstream: Left bank area:	Right bank area:
	Tender slope continue to low terrace	1 ~
Geology, (feature of river bank/bed)	Left bank area:	Right bank area:
Outcrop, stone, gravel, sand / Fault		Sandy soil with round gravel mixed
Soil type, etc.,		<u> </u>
	River bed:	
Hudashaay / Pastura of the S	Sandy gravel	ink side flown toward WOW direction.
Hydrology, (Feature of river flow,		
Water level, flood level)	Water depth of 2.0m and 0.3m/sec.,	nes up to 1.0m of existing water level.
Fauna & Flora / habitats	Deciduous forest of southern area v	
Rare species /community, etc.,	Common fishes, trout and birds spe	
reare species reonanging, etc.,	No specific area of importance. Ra	
Pollu		
Complaints:	No specific items	
Population of the upmost concern		
Measures taken:	No specific items	
Institutional measures	1	
Compensation		
Others		

APPENDIX II-7-B

IEE AND PRELIMINARY EIA EVALUATION SHEETS

Contents

No.	Bridge Name
1	Confluencia
2	David Garcia
. 3	Granallas
4	Ventanas
5	San Jose
6	Puangue
7	San Jose de Marchiue
8	Antivero No. 2
9	Los Cardos
10	Cautin
11	El Indio
12	Quillen
13	Poculon
14	Malleco
15	Miraflores
16	San Juan
17	Medina
18	Cautin (88)
19	Salva Tu Alma
20	Ouinahilaa



_	nvironmental	Identification of	Description	IEE	Preliminary	Remarks (Reason)
	component	activitles	of activitles	evaluation	EIA evaluation	
	o economic Er	vironment				
1	Land and	Land aquisition	Transfer of right of land ownership	No		
1	Property	_	compensation		·	
-		Resettlement	Transfer of rights of residence /	No		
-			compensation			
2	Economic	Economic	Loss of basis of economic activities,	No		
-[activities	such as land, and change of economic	110	i.	
١			structure			•
١		Employment	Increase or decrease of employment	No		
1		Lingtoyment	• •	110		
ᆉ	F., (C.,)	T 66:-	opportunity	700	<u> </u>	
	Traffic and	Traffic	Impact on present traffic conditions,	Temporal		Partial use of deck
-	Public facilities		increase of traffic congestion			space
-		Public facilities	Impacts on schools, hospitals caused	No		*.
4			by increase of traffic volume			
4	Communities	Disintegration of	Community split due to interruption	No		
_		communities	of area traffic			
	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and	Historical assets	Damage or loss of the value of	No		
-1	Cultural	4	historic or archaeological remains		·	
-	•	Cultural properties	Damage or loss of the value of	No		
-			cultural assets			
7	Vested rights	Water rights and	Obstruction of fishing rights, water	No		
		rights of common	rights, or other rights of common			
8	Waste	Waste	Generation of construction and	No	· · · · · · · · · · · · · · · · · · ·	
٦			demolition debris	110	* 7	
히	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
	ural Environn	nent	wisk of accidents, traffic dantage	110	L	L
	Land	Topographic feature	Changes of valuable topographic	Ma		,
ľ	Land	/river bank and bed	land form condition	No		
ı				NI NI		
ı		Geological condition	Changes of geological condition	No		
Ì		Land use	Change of original land use	No		
-		Soil erosion	Topsoil erosion by rainfall after	No		
_			earth work and vegetation removal			
ш	Surface water	Hydrological feature	Changes of flow variation	No	:	
1		Water use	Change of existing water use	No		
١		Water quality	Change of water quality	No		
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
[2	Species and	Terrestrial vegetation	Obstruction of valuable species and	No		
	their	/flora	their community, habitat		* .	
	population,	Terrestrial wildlife	Obstruction of breeding and extinction	No		
Ì	habitat	/fauna	of species, communities, habitat			
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction		 	
			of species, communities, habitat	1.0		
13	Aesthetics	Landscape	Changes of topography and vegetation	No		
	restrictes	Landscape	due to reclamation. Deterioration of	. 110	j	Ì
			1			
201	lutio-	<u> </u>	aesthetic harmony by structure	L,	<u> </u>	<u> </u>
	lution	14: 11:	In n			
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or	No	1	
		<u></u>	toxic gas from vehicles			
t6	Water	Water pollution	Pollution by inflow of silt, sand and	No		
_ {			effluent into rivers			1
17	Noise and	Noise and vibration	Generation by construction machinery	No		
	vibration		and traffic vehicles			. 11.
	VIUIARON					
	rall evaluation			No need of		

	vironmental	Identification of	Description	IEE	Preliminary	Remarks (Reason)
	component	activities	of activities	evaluation	EIA evaluation	
	economic En					
	Property		Transfer of right of land ownership compensation	No		
		Resettlement	Transfer of rights of residence / compensation	No		
2 E	conomic	Economic	Loss of basis of economic activities,	No		
			such as land, and change of economic structure			
		Employment	Increase or decrease of employment opportunity	Increase		Const. Period
	raffic and ublic facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Tempora!	Temporal	Use of detour rout Safety control
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
40	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
51,	Amenity	Amenities	Increase or loss of existing amenities	Increase	Enhance	Aesthetic condition
61		Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		1
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	Yes	Temporal	Obligation to the construction side
	Hazards	Risk and damage	Risk of accidents, traffic damage	Slightly	Temporal	Safety control
at	ural Environn	nent				
0	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
	•	Land use	Change of original land use	No		Negligible
1	÷	Soil crosion	Topsoil crosion by rainfall after earth work and vegetation removal	Slightly	Temporal	Negligible
1	Surface water	Hydrological feature	Changes of flow variation	No		
ı		Water use	Change of existing water use	No		
1		Water quality	Change of water quality	slightly	Temporal	Negligible
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
	Species and their	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
	population, habitat	Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	n No	·	
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities, habitat	Slightly	Temporal	Negligible
!3	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	n No		
ol	lution					
	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	Slightly	Temporal	Control of soil di
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	Slightly	Temporal	Negligible
	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	Slightly	Temporal	Control operation hour.
lvi	rall evaluation	1		Need of		.

	nvironmental	Identification of	Description	IEE	Preliminary	Remarks (Reason)
	component	activities	of activities	evaluation	EIA evaluation	
	o economic Er					
	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
		Resettlement	Transfer of rights of residence / compensation	No	 	
ᇷ	Economic	Economic	Loss of basis of economic activities,	No		
~ '	Sconomic	activities		110		*
- 1		activities	such as land, and change of economic			
-1		Dlavet	structure	7		0 1
		Employment	Increase or decrease of employment	Increase		Const. Period
1		20. 60	opportunity			
		Traffic	Impact on present traffic conditions,	Temporal	Temporal	Use of detour route
- l'	Public facilities		increase of traffic congestion			Safety control
		Public facilities	Impacts on schools, hospitals caused	No		
-,			by increase of traffic volume		· · · · · · · · · · · · · · · · · · ·	;
4	Communities	Disintegration of	Community split due to interruption	No		
_	· · · · · · · · · · · · · · · · · · ·	communities	of area traffic		11 1	
<u>ગ</u>	Amenity	Amenities	Increase or loss of existing amenities	Increase	Enhance	Aesthetic condition
		Historical assets	Damage or loss of the value of	No		i .
- [Cultural		historic or archaeological remains			
- 1		Cultural properties	Damage or loss of the value of	No		
_			cultural assets	1. 1.	····	
7	Vested rights	Water rights and	Obstruction of fishing rights, water	No		
_		rights of common	rights, or other rights of common			
8	Waste	Waste	Generation of construction and	Yes	Temporal	Obligation to the
_			demolition debris		:	construction side
	Hazards	Risk and damage	Risk of accidents, traffic damage	Slightly	Temporal	Safety control
_	ural Environn					
10	Land	Topographic feature	Changes of valuable topographic	No		: 1
		/river bank and bed	land form condition			
Į		Geological condition	Changes of geological condition	No		
- 1		Land use	Change of original land use	No		Negligible
- 1		Soil erosion	Topsoil erosion by rainfall after	Slightly	Temporal	Negligible
			earth work and vegetation removal			
11	Surface water	Hydrological feature	Changes of flow variation	No		
- 1		Water use	Change of existing water use	No		
ŀ		Water quality	Change of water quality	slightly	Temporal	Negligible
ı	11	Floating debris	Floating obstacles	No		
_		Flood affection	Flood affected area	No		
	Species and	Terrestrial vegetation		No	·	
1	their	/flora	their community, habitat			
	population,	Terrestrial wildlife	Obstruction of breeding and extinction	No		Negligible
l	habitat	/fauna	of species, communities, habitat			
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction	Slightly	Temporal	Negligible
	 		of species, communities, habitat			
13	Aesthetics	Landscape	Changes of topography and vegetation	No		
ı			due to reclamation. Deterioration of			
			aesthetic harmony by structure			
	lution		· .	-		
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or	Slightly	Temporal	Control of soil dus
$oldsymbol{ol}}}}}}}}}}}}}}}}}}}}}$			toxic gas from vehicles			<u>l</u>
16	Water	Water pollution	Pollution by inflow of silt, sand and	Slightly	Temporal	Negligible
			effluent into rivers	_ :		
17	Noise and	Noise and vibration	Generation by construction machinery	Slightly	Temporal	Control operation
J	vibration		and traffic vehicles		·	hour.
Ͻνͼ	rall evaluation	- ,		Need of	-	
			cessary for the project implementation?			
			,, was well was an appropriate the contract to th			

Topographic feature /river bank and bed land form condition Geological condition Changes of geological condition Land use Change of original land Soil erosion Topsoil erosion by rainfine earth work and vegetation Water use Change of existing water Water quality Change of water quality Floating debris Floating obstacles Flood affection Flood affected area	IEE Preliminary Remarks (Reason) evaluation EIA evaluation
I Land and Property Resettlement Transfer of right of land compensation	CVARUATION CEA CVARUATION
Property Resettlement Resettlement Transfer of rights of resist compensation Loss of basis of economic activities Remployment Responsible to the comportant of the composition o	
Compensation Loss of basis of economic activities Loss of basis of economic such as land, and change structure Employment Increase or decrease of economic activities Increase or decrease of economic such as land, and change structure Increase or decrease of economic increase of traffic congest of traffic congest of traffic congest of traffic congest of traffic volton of area traffic congest of traffic volton of area traffic increase or loss of existing volton increase or loss of existing volton increase or loss of the volton of area traffic increase or loss of the volton increase or	
activities such as land, and change structure Bmployment	
Structure Increase or decrease of expoportunity Impact on present traffic Impact on present Impact on present traffic Impact on present Impact on presen	c activities, No
Bmployment Increase or decrease of expoportunity	of economic
Traffic and Public facilities	mployment No
Public facilities Public facilities Impacts on schools, hosp by increase of traffic volve Impacts on schools, hosp by increase of traffic volve Impacts on schools, hosp by increase of traffic volve Impacts on schools, hosp by increase of traffic volve Impacts on schools, hosp by increase of traffic volve Impacts on schools, hosp by increase of traffic volve Impacts on schools, hosp by increase of traffic volve Impacts on schools, hosp by increase of traffic volve Impacts on schools, hosp by increase of traffic volve Impacts on schools, hosp by increase of traffic volve Impacts on schools, hosp by increase of traffic volve Impacts on schools, hosp by increase of traffic volve Impacts on schools, hosp by increase of least to fare a traffic Impacts of least traffic Impacts of	conditions, Temporal Partial use of deck
by increase of traffic vol.	stion space
Communities Of area traffic	
Samenity Amenities Increase or loss of existing to the variation of valuable to plant of the variation of valuable to plant of the variation of valuable of species, communities o	nterruption No
Cultural Cultural Cultural Cultural Cultural Cultural properties Cultural properties Cultural properties Cultural assets 7 Vested rights Water rights and rights of common Rights of common Rights of common Rights of common Rights, or other rights of construction demolition debris Risk of accidents, traffic Changes of valuable top land form condition Changes of valuable top land form condition Changes of geological condition Land use Change of riginal land Topsoil erosion by rainfor earth work and vegetatic Water use Water quality Change of water quality Floating debris Flood affection Richard Change of water quality Floating debris Flood affection Richard Change of valuable Water quality Richard Change of water quality Richard Change of system of valuable Water use Water quality Richard Change of topography due to reclamation. Detraction of breeding of species, communities Richard Changes of topography due to reclamation. Detraction of process of topography due to reclamation of process of topography due to reclamation. Detraction of process of topography due to reclamation of process of topography due to reclamation of process of topography due to reclamation. Detraction of process of topography due to reclamation of process of topography due to reclamation of process of topography due to reclamation of process of topography due to reclamation. Pollution	ng amenities Increase Aesthetic condition
Cultural Properties Damage or loss of the vicultural assets 7 Vested rights Water rights and rights of common rights, or other rights of Generation of Construction demolition debris 9 Hazards Risk and damage Risk of accidents, traffice 10 Land Topographic feature / river bank and bed Geological condition 10 Land Topographic feature / river bank and bed Geological condition 11 Surface water Hydrological feature Changes of geological condition 12 Surface water Hydrological feature Changes of flow variation 13 Species and Terrestrial vegetation Floating debris 14 Floating debris Floating obstacles 15 Species and Terrestrial vegetation Floating obstacles 16 Water Landscape Changes of topography 17 Atmosphere Air pollution 18 Auster Pollution Pollution caused by exh 19 Auster Water pollution Pollution by inflow of seffluent into rivers 17 Noise and Noise and vibration Generation by construction 18 Cultural properties Damage or loss of the vicultion of second 19 Damage or loss of the vicultion of construction of construction of construction of the prights of second 10 Damage or loss of the vicultion of the prights of the prights of the vicing assets 10 Data	
Cultural assets Cultural assets	al remains
rights of common rights, or other rights of 8 Waste Waste Generation of construction demolition debris Risk and damage Risk of accidents, traffic demolition debris Risk and damage Risk of accidents, traffic demolition debris Risk and damage Risk of accidents, traffic demolition debris Risk and damage Risk of accidents, traffic demolition debris Risk of accidents, traffic demolition debris Risk of accidents, traffic demolition demolition deposition demolition Changes of valuable top land form condition Changes of geological condition Changes of geological condition Risk and vegetation Risk and vegetation Risk and vegetation Change of existing wate Water quality Risk and vegetation Risk and vegetation Risk and vegetation Risk and Risk and vegetation Risk and Risk and vegetation	
8 Waste Waste Generation of construction demolition debris 9 Hazards Risk and damage Risk of accidents, traffic Natural Environment 10 Land Topographic feature /river bank and bed Geological condition Changes of geological condition Changes of geological condition Changes of original land Soil erosion Topsoil erosion by rainfearth work and vegetatic Water use Change of existing wate Water quality Floating debris Floating obstacles Flood affection Flood affected area Terrestrial wildlife /flora Dobstruction of valuable their population, habitat Terrestrial wildlife Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Changes of topography due to reclamation. Detreating the reclamation of the pollution Pollution Pollution Systems of Struction of species of topography due to reclamation. Detreating the reclamation of the pollution Pollution Systems of Struction of Species of Struction of Species of Struction of Species o	
Surface water Hydrological feature Water quality Floating debris Flood affected area	
Parads	
Changes of valuable top land form condition	damage No
Topographic feature /river bank and bed land form condition Geological condition Changes of geological condition Land use Change of original land Soil erosion Topsoil erosion by rainfine earth work and vegetation Water use Change of existing wate Water quality Change of water quality Floating debris Floating obstacles Flood affection Flood affected area Terrestrial vegetation Iteir population, habitat Ferrestrial wildlife Aquatic flora Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding Aquatic fish fauna Obstruction of breeding Aquatic fish fauna Obstruction of breeding Aquatic fish fauna Obst	
/river bank and bed land form condition Geological condition Changes of geological condition Change of original land Soil erosion Topsoil erosion by rainf earth work and vegetation Changes of flow variation Water use Changes of flow variation Change of existing water Water quality Change of water quality Floating debris Floating obstacles Flood affected area 12 Species and their flora flora Changes of flow variation Change of water quality Floating obstacles Flood affected area 12 Species and their flora Changes of topstruction of valuable flauna Obstruction of breeding Obstruction of breeding Obstruction of valuable Aquatic flora Obstruction of valuable Aquatic fish fauna Obstruction of breeding Of species, communities Obstruction of breeding Of species, communities Obstruction of breeding Of species, communities Obstruction of breeding Obstruction Obst	ographic No
Geological condition Land use Change of original land Soil erosion Topsoil erosion by rainf earth work and vegetation Changes of flow variation Water use Water quality Floating debris Floating obstacles Flood affection Terrestrial vegetation Advatic flora Aquatic fish fauna Aquatic fish fauna Acesthetics Pollution Soil erosion Topsoil erosion by rainf earth work and vegetation Changes of flow variation Changes of existing wate Change of existing wate Change of water quality Floating obstacles Flood affected area Terrestrial vegetation Aflora Obstruction of valuable Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of valuable Aquatic fish fauna Obstruction of breeding of species, communities Changes of topography due to reclamation. Deta aesthetic harmony by st Pollution Soil erosion Changes of flow variation Obstruction of valuable Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities Pollution Pollution caused by ext toxic gas from vehicles Water pollution Pollution by inflow of s effluent into rivers To Noise and Noise and vibration Generation by construct	Vision I
Land use Soil erosion Soil erosion Topsoil erosion by rainf earth work and vegetation Water use Water quality Floating debris Floating obstacles Flood affection Terrestrial vegetation Change of existing wate Floating debris Floating obstacles Flood affected area Terrestrial vegetation Obstruction of valuable their population, habitat Terrestrial wildlife Aquatic flora Aquatic fish fauna Obstruction of valuable Aquatic fish fauna Obstruction of valuable Aquatic fish fauna Obstruction of breeding of species, communities Obstruction of valuable Aquatic fish fauna Obstruction of breeding of species, communities Changes of topography due to reclamation. Deta aesthetic harmony by st Pollution Soil erosion Water pollution Pollution caused by ext toxic gas from vehicles Pollution by inflow of s effluent into rivers Generation by construct	ondition No
Soil erosion Surface water Hydrological feature Water use Water use Water quality Floating debris Floating obstacles Flood affection Terrestrial vegetation Change of existing wate Water quality Floating obstacles Flood affected area Terrestrial vegetation Change of water quality Floating obstacles Flood affected area Terrestrial vegetation Change of water quality Floating obstacles Flood affected area Obstruction of valuable Aquatic flora Aquatic flora Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of valuable Aquatic fish fauna Obstruction of breeding of species, communities Obstruction of valuable Aquatic fish fauna Obstruction of breeding of species, communities Changes of topography due to reclamation. Deta aesthetic harmony by st Pollution Solution Pollution caused by ext toxic gas from vehicles Water Water pollution Pollution by inflow of s effluent into rivers Toxic gas from vehicles Generation by construction Generation by construction	
Surface water Hydrological feature Changes of flow variation Water use Change of existing water Water quality Change of water quality Floating debris Floating obstacles Flood affection Flood affected area	all after No
Water use Water quality Floating debris Floating obstacles Flood affection Terrestrial vegetation their population, habitat Aquatic flora Aquatic fish fauna Acsthetics Landscape Air pollution Pollution Atmosphere Air pollution Water use Water quality Floating obstacles Flood affected area Obstruction of valuable their community, habita Obstruction of breeding of species, communities Obstruction of valuable Obstruction of valuable Obstruction of breeding of species, communities Changes of topography due to reclamation. Dete aesthetic harmony by st Pollution Pollution caused by ext toxic gas from vehicles Pollution by inflow of s effluent into rivers Ponson	on removal
Water quality Floating debris Floating obstacles Flood affection Flood affected area 12 Species and their /filora population, habitat Terrestrial wildlife /fauna Aquatic flora Aquatic fish fauna Obstruction of valuable Changes of topography due to reclamation. Dete aesthetic harmony by st Pollution 15 Atmosphere Air pollution Pollution caused by ext toxic gas from vehicles 16 Water Water pollution Pollution by inflow of seffluent into rivers 17 Noise and Noise and vibration Generation by construct	on No
Floating debris Floating obstacles Flood affection Flood affected area 12 Species and their /filora Cobstruction of valuable their community, habita population, habitat /faona Obstruction of breeding of species, communities Aquatic flora Obstruction of valuable Aquatic fish fauna Obstruction of breeding of species, communities 13 Aesthetics Landscape Changes of topography due to reclamation. Detraction of better to valuable aesthetic harmony by stem of the pollution Pollution caused by extraction of the pollution pollution of species. 16 Water Water pollution Pollution by inflow of seffluent into rivers 17 Noise and Noise and vibration Generation by construction of species are pollution of the pollution of	
Flood affection Flood affected area 12 Species and their population, habitat Flood affected area 13 Aesthetics Flood affection of valuable fish fauna population, habitat Fauna population postruction of breeding postruction of valuable postruction of valuable postruction of breeding postruction postruction postruction. Detraction postruction	
12 Species and their population, population, habitat Terrestrial wildlife population, habitat Terrestrial wildlife population, fauna population, habitat Aquatic flora postruction of breeding of species, communities postruction of valuable postruction of valuable postruction of breeding postruction post	No
their population, habitat Terrestrial wildlife /fauna of species, communities Aquatic flora Obstruction of valuable Aquatic fish fauna Obstruction of breeding of species, communities Aquatic fish fauna Obstruction of breeding of species, communities 13 Aesthetics Landscape Changes of topography due to reclamation. Deta aesthetic harmony by st Pollution 15 Atmosphere Air pollution Pollution caused by exh toxic gas from vehicles 16 Water Water pollution Pollution by inflow of seffluent into rivers 17 Noise and Noise and vibration Generation by construction	No
population, habitat Terrestrial wildlife Obstruction of breeding of species, communities Aquatic flora Obstruction of valuable Aquatic fish fauna Obstruction of valuable Aquatic fish fauna Obstruction of breeding of species, communities 13 Aesthetics Landscape Changes of topography due to reclamation. Deta aesthetic harmony by st Pollution Pollution caused by exh toxic gas from vehicles Water Water pollution Pollution by inflow of seffluent into rivers 17 Noise and Noise and vibration Generation by construction	
Aquatic flora Obstruction of valuable Aquatic fish fauna Obstruction of breeding of species, communities Changes of topography due to reclamation. Det aesthetic harmony by st Pollution Air pollution Pollution caused by exh toxic gas from vehicles Water Water pollution Pollution by inflow of s effluent into rivers Noise and Noise and vibration Obstruction of valuable Obstruction of valuable Obstruction of valuable Polstruction of valuable Pollution of valuable Pollution of valuable Pollution of valuable Obstruction of valuable Pollution of valuable Pollution of valuable Obstruction of valuable Obstruction of valuable Pollution of valuable Obstruction of valuable Obstr	and extinction No
Aquatic fish fauna Obstruction of breeding of species, communities 13 Aesthetics Landscape Changes of topography due to reclamation. Deta aesthetic harmony by st Pollution 15 Atmosphere Air pollution Pollution caused by extroxic gas from vehicles 16 Water Water pollution Pollution by inflow of seffluent into rivers 17 Noise and Noise and vibration Generation by construction	
13 Aesthetics Landscape Changes of topography due to reclamation. Det aesthetic harmony by st Pollution 15 Atmosphere Air pollution Pollution caused by extractional toxic gas from vehicles 16 Water Water pollution Pollution by inflow of seffluent into rivers 17 Noise and Noise and vibration Generation by construction	and extinction No
due to reclamation. Determine a pollution 15 Atmosphere	
Pollution 15 Atmosphere Air pollution Pollution caused by exh toxic gas from vehicles 16 Water Water pollution Pollution by inflow of seffluent into rivers 17 Noise and Noise and vibration Generation by construction	erioration of
15 Atmosphere Air pollution Pollution caused by exh toxic gas from vehicles 16 Water Water pollution Pollution by inflow of seffluent into rivers 17 Noise and Noise and vibration Generation by construction	iuciuic
toxic gas from vehicles 16 Water Water pollution Pollution by inflow of s effluent into rivers 17 Noise and Noise and vibration Generation by construct	and see at I No I
effluent into rivers 17 Noise and Noise and vibration Generation by construct	
17 Noise and Noise and vibration Generation by construct	ilt, sand and No
vibration and traffic vehicles	tion machinery No
Overall evaluation	
Overall evaluation Is Preliminary EIA necessary for the project in	No need of nplementation? Pre-EIA

Region: Metropolitana, Province: Chacabuco (Replacement: existing RC bridge)

	Environmental component	identification of activities	Description of activities	IEE	Preliminary EIA evaluation	Remarks (Reason
	lo economic Er		Of activities	evaluation	EtA evaluation	
	Land and	Land aquisition	Therefore of alaba (the hand)		· · · · · · · · · · · · · · · · · · ·	
٠	Property	Land addismon	Transfer of right of land ownership compensation	No		
	respond	Resettlement	Transfer of rights of residence /			
		Resourcine	compensation	No		
2	Economic	Economic	Loss of basis of economic activities,	No		
-	Leonomio	activities	such as land, and change of economic	110		
		activities	istructure			
		Employment	Increase or decrease of employment	T		
		Linployment	• •	Increase		Const. Period
3	Traffic and	Traffic	opportunity	<u> </u>		
3	Public facilities		Impact on present traffic conditions,	Temporal		Use of deture rout
	r done raemnes	Public facilities	increase of traffic congestion			safety control
		ruone facilities	Impacts on schools, hospitals caused	No		
4	Communities	Digintagestion of	by increase of traffic volume			
4	Communities	Disintegration of communities	Community split due to interruption	No		
_	Amenity	Amenities	of area traffic			
3	Amenny	Historical assets	Increase or loss of existing amenities	Increase		Aesthetic conditio
	Cultural	Historical assets	Damage or loss of the value of	No	•	
	Cultural	Outros I - se - setes	historic or archaeological remains			
		Cultural properties	Damage or loss of the value of	No		
7	Vested rights	Water siable and	cultural assets			
′	vested rights	Water rights and	Obstruction of fishing rights, water	No		
0	Waste	rights of common	rights, or other rights of common			
0	waste	Waste	Generation of construction and	Yes	Temporal	Obligation to the
•	Hazards	Third and a	demolition debris			construction side
	ural Environn	Risk and damage	Risk of accidents, traffic damage	Slightly	Temporal	
_	Land					
ıv	Lano	Topographic feature	Changes of valuable topographic	No	:	
		/river bank and bed	land form condition			
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No	· · · · · · · · · · · · · · · · · · ·	
		Soil erosion	Topsoil erosion by rainfall after	No		
11	Surface water	17-1-1-1-1-1-6-1	earth work and vegetation removal			
ΙI	Surface water	Hydrological feature	Changes of flow variation	No		
	•	Water use	Change of existing water use	No		
		Water quality	Change of water quality	No	·	
		Floating debris	Floating obstacles	No		
-		Flood affection	Flood affected area	No		
LZ	Species and	Terrestrial vegetation	Obstruction of valuable species and	No		
		/flora	their community, habitat	8.77		
	population,	Terrestrial wildlife	Obstruction of breeding and extinction	No		
	habitat	/fauna	of species, communities, habitat			
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction	No		
			of species, communities, habitat			: '
13	Aesthetics	Landscape	Changes of topography and vegetation	No		
			due to reclamation. Deterioration of			
			aesthetic harmony by structure	<u> </u>		,
_	iution					
5	Atmosphere	Air pollution	Pollution caused by exhaust gas or	No	·	
			toxic gas from vehicles			
6	Water	Water pollution	Pollution by inflow of silt, sand and	No		
_			effluent into rivers		•	· .
7	Noise and	Noise and vibration	Generation by construction machinery	No		
1			and traffic vehicles		*.	
	vibration					
	vioration rall evaluation		and delivered	Need of		

ol	Invironmental component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
	o economic En					
	Land and		Transfer of right of land ownership	Yes	Private land	Need of
	Property		compensation			compensation
١	Troperty	Resettlement	Transfer of rights of residence /	Yes	1 house,	Need of
1		Resement	compensation		•	compensation
╗	Economic	Economic	Loss of basis of economic activities,	No	depends on site	compensation
'ا'	Economic	activities	such as land, and change of economic	110	,	
١	. *	activities	structure			
1		Davelovenout	Increase or decrease of employment	Increase		Const. Period
1		Employment		increase		Colisi. I citod
_			opportunity		T	11 6 2 - 2 - 2 - 2 - 2
		Traffic	Impact on present traffic conditions,	Temporal	Temporal	Use of existing brid
1	Public facilities		increase of traffic congestion			for detour pass.
		Public facilities	Impacts on schools, hospitals caused	No		
_	<u> </u>		by increase of traffic volume			
4	Communities	Disintegration of	Community split due to interruption	No	•	1
Ц		communities	of area traffic			
	Amenity	Amenities	Increase or loss of existing amenities	Increase	Enhance	Aesthetic condition
		Historical assets	Damage or loss of the value of	No		
	Cultural		historic or archaeological remains	L	·	
		Cultural properties	Damage or loss of the value of	No		1
			cultural assets	l .		
7	Vested rights	Water rights and	Obstruction of fishing rights, water	No		
1		rights of common	rights, or other rights of common	1		
8	Waste	Waste	Generation of construction and	Yes	Temporal	Obligation to the
			demolition debris	ļ	Ī	construction side
9	Hazards	Risk and damage	Risk of accidents, traffic damage	Slightly	Temporal	Safety control
	tural Environn		<u> </u>	 		
10	Land	Topographic feature	Changes of valuable topographic	Slightly	Slightly	Control of limited
		/river bank and bed	land form condition			changes
1	İ	Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	Yes	Slightly	Negligible
		Soil erosion	Topsoil erosion by rainfall after	Slightly	Temporal	Negligible
			earth work and vegetation removal	J. B	74	
7 i	Surface water	Hydrological feature	Changes of flow variation	No	 	
••	Surface mater	Water use	Change of existing water use	No		
		Water quality	Change of water quality	slightly	Temporal	Negligible
		Floating debris	Floating obstacles	No	Temporal	riegrigioio
		Flood affection	Flood affected area	No		
13	Species and	Terrestrial vegetation		No		
12	their			110		
		/flora Terrestrial wildlife	their community, habitat Obstruction of breeding and extinction	n No	-	 -
	population,	Tellestilat antonie		NO NO		
		1.c			}	<u> </u>
	habitat	/fauna	of species, communities, habitat	 		
	habitat	Aquatic flora	Obstruction of valuable species	No		1
	habitat		Obstruction of valuable species Obstruction of breeding and extinction		Temporal	Negligible
		Aquatic flora Aquatic fish fauna	Obstruction of valuable species Obstruction of breeding and extinction of species, communities, habitat	Slightly	Temporal	Negligible
13	habitat Aesthetics	Aquatic flora	Obstruction of valuable species Obstruction of breeding and extinction of species, communities, habitat Changes of topography and vegetation	Slightly	Temporal	Negligible
13		Aquatic flora Aquatic fish fauna	Obstruction of valuable species Obstruction of breeding and extinction of species, communities, habitat Changes of topography and vegetation due to reclamation. Deterioration of	Slightly	Temporal	Negligible
	Aesthetics	Aquatic flora Aquatic fish fauna	Obstruction of valuable species Obstruction of breeding and extinction of species, communities, habitat Changes of topography and vegetation	Slightly	Temporal	Negligible
		Aquatic flora Aquatic fish fauna Landscape	Obstruction of valuable species Obstruction of breeding and extinction of species, communities, habitat Changes of topography and vegetation due to reclamation. Deterioration of	Slightly	Temporal	Negligible
Po	Aesthetics llution	Aquatic flora Aquatic fish fauna Landscape	Obstruction of valuable species Obstruction of breeding and extinction of species, communities, habitat Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	Slightly	Temporal	Negligible
Po	Aesthetics	Aquatic flora Aquatic fish fauna	Obstruction of valuable species Obstruction of breeding and extinction of species, communities, habitat Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure Pollution caused by exhaust gas or	Slightly No	Temporal	Negligible
Po	Aesthetics Ilution Atmosphere	Aquatic flora Aquatic fish fauna Landscape Air pollution	Obstruction of valuable species Obstruction of breeding and extinction of species, communities, habitat Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure Pollution caused by exhaust gas or toxic gas from vehicles	No No		
Po	Aesthetics llution	Aquatic flora Aquatic fish fauna Landscape	Obstruction of valuable species Obstruction of breeding and extinction of species, communities, habitat Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure Pollution caused by exhaust gas or toxic gas from vehicles Pollution by inflow of silt, sand and	Slightly No		Negligible Negligible
Po 15	Aesthetics Ilution Atmosphere	Aquatic flora Aquatic fish fauna Landscape Air pollution Water pollution	Obstruction of valuable species Obstruction of breeding and extinction of species, communities, habitat Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure Pollution caused by exhaust gas or toxic gas from vehicles Pollution by inflow of silt, sand and effluent into rivers	No Slightly No Slightly	Temporal	Negligible
Po 15	Aesthetics Ilution Atmosphere Water Noise and	Aquatic flora Aquatic fish fauna Landscape Air pollution	Obstruction of valuable species Obstruction of breeding and extinction of species, communities, habitat Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure Pollution caused by exhaust gas or toxic gas from vehicles Pollution by inflow of silt, sand and effluent into rivers Generation by construction machinery	No Slightly No Slightly	Temporal	Negligible Control operation
Po 15 16	Aesthetics Ilution Atmosphere	Aquatic flora Aquatic fish fauna Landscape Air pollution Water pollution Noise and vibration	Obstruction of valuable species Obstruction of breeding and extinction of species, communities, habitat Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure Pollution caused by exhaust gas or toxic gas from vehicles Pollution by inflow of silt, sand and effluent into rivers	No Slightly No Slightly	Temporal Temporal	Negligible

No	invironmental component	Identification of activities	Description of activities	IEE evaluation	Preliminary ELA evaluation	Remarks (Reason)
Soci	o economic Er	vironment				
П	Land and	Land aquisition	Transfer of right of land ownership	Yes	If private	Need of
1	Property	•	compensation		land	compensation
- 1		Resettlement	Transfer of rights of residence /	Yes	Small hatch	Need of
- 1			compensation		:	compensation
2	Economic	Economic	Loss of basis of economic activities,	No		compensation
-1	-300	activities	such as land, and change of economic	1.0	: : :	1
- 1		uctivities	structure			
- 1	,	Employment	Increase or decrease of employment	No		
- 1		Linployment	• •	110		
닠	Traffic and	TD 6C.	opportunity	min	(D) 1	II C. 1
		Traffic	Impact on present traffic conditions,	Temporal	Temporal	Use of detour route
- 1	Public facilities		increase of traffic congestion			to be made
		Public facilities	Impacts on schools, hospitals caused	No		
_			by increase of traffic volume	100		
4	Communities	Disintegration of	Community split due to interruption	No	,1 , 1	in the second
_		communities	of area traffic			
	Amenity	Amenities	Increase or loss of existing amenities	Increase	Enhance	Aesthetic condition
		Historical assets	Damage or loss of the value of	No		
- 1	Cultural		historic or archaeological remains			
		Cultural properties	Damage or loss of the value of	No	. :	
			cultural assets		1	1
7	Vested rights	Water rights and	Obstruction of fishing rights, water	No		
ł		rights of common	rights, or other rights of common	1.	in the second	
8	Waste	Waste	Generation of construction and	Yes	Temporal	Obligation to the
			demolition debris			construction side
9	Hazards	Risk and damage	Risk of accidents, traffic damage	Slightly	Temporal	Safety control
	ural Environn	rent				
	Land	Topographic feature	Changes of valuable topographic	No	· · · · · · · ·	
		/river bank and bed	land form condition	110		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
	•	Soil erosion	Topsoil erosion by rainfall after	Slightly	Temporal	Negligible
		Son crosion	earth work and vegetation removal	Sugariy	remporar	regugioic
11	Surface water	Hudaalaalaal faatura	Changes of flow variation	Ňř.	 	
11	Surface water	Hydrological feature Water use		No	ļ	
			Change of existing water use	No	/n 1	AT 31 11 1
		Water quality	Change of water quality	Slightly	Temporal	Negligible
		Floating debris	Floating obstacles	No		
4.0		Flood affection	Flood affected area	No		
12	Species and		Obstruction of valuable species and	No	100	
	their	/flora	their community, habitat			
	population,	Terrestrial wildlife	Obstruction of breeding and extinction	No	-	
	habitat	/fauna	of species, communities, habitat			İ
		Aquatic flora	Obstruction of valuable species	No		:
		Aquatic fish fauna	Obstruction of breeding and extinction	Slightly	Temporal	Negligible
	·		of species, communities, habitat			
13	Aesthetics	Landscape	Changes of topography and vegetation	No		
		•	due to reclamation. Deterioration of			
			aesthetic harmony by structure			
Pol	lution	•			• · · · · · · · · · · · · · · · · · · ·	
	Atmosphere	Air pollution	Pollution caused by exhaust gas or	Slightly	Temporal	Control of soil dust
	sopo.		toxic gas from vehicles	Sugarity	Temporar	Some of Son oust
16	Water :	Water pollution	Pollution by inflow of silt, sand and	Slightly	Temporal	Negligible
10	Wales	Trace position	effluent into rivers	Sugmy	Temporar	rickultanc
12	Noise c=	Mains and silvertine		CV: 1.1	<u> </u>	6
I.	Noise and	Noise and vibration	Generation by construction machinery	Slightly	Temporal	Control operation
	vibration	§	and traffic vehicles		I	hour.
-		البرا المساول المناها التنبية بالمنت المناه				
Οv	erall evaluation		cessary for the project implementation?	Need of		

Format for Environmental impact considerations: Bridge name: Antivero No.2

Region: VI, Libertador General Bernardo O'Higgins, Province: Colchagua (Replacement: existing RC bridge)

	nvironmental	Identification of	Description	IEE	Preliminary	Remarks (Reason)
	component	activities	of activities	evaluation	EIA evaluation	
	o economic En			_ :		
	and and	Land aquisition	Transfer of right of land ownership	Yes	If private	Need of
- 1	Property		compensation		land	compensation
1		Resettlement	Transfer of rights of residence /	No		, ;
			compensation			
2 1	Economic	Economic	Loss of basis of economic activities,	No		
- 1		activities	such as land, and change of economic			
1		73 12	structure	.,		
	·	Employment	Increase or decrease of employment	No		
	25 ACT 1		opportunity			
	Traffic and	Traffic	Impact on present traffic conditions,	Temporal	Temporal	Use of existing bridg
1	Public facilities		increase of traffic congestion			as a detour route
		Public facilities	Impacts on schools, hospitals caused	No		
	A 23		by increase of traffic volume			
4	Communities	Disintegration of	Community split due to interruption	No		
		communities	of area traffic	_		ļ
	Amenity	Amenities Historical assets	Increase or loss of existing amenities	Increase	Enhance	Aesthetic condition
-		Historical assets	Damage or loss of the value of	No	1	
	Cultural	Cultural appropriate	historic or archaeological remains	ļ		
1		Cultural properties	Damage or loss of the value of	No	1	
	Markad alabea	Water sights and	cultural assets Obstruction of fishing rights, water	<u> </u>		ļ
- 4	Vested rights	Water rights and rights of common		No		
	Waste	Waste	rights, or other rights of common Generation of construction and	ļ.,,	<u> </u>	<u> </u>
ା	waste	Wasie	demolition debris	Yes	Temporal	Obligation to the
	Hazards	Risk and damage	Risk of accidents, traffic damage	01:-1-0	70	construction side
	ural Environn		Kisk of accidents, frame damage	Slightly	Temporal	Safety control
	Land	Topographic feature	Changes of valuable topographic	- 	<u></u>	T
10	Land	/river bank and bed		No		
		Geological condition	land form condition Changes of geological condition			.
		Land use	Change of original land use	No No	<u> </u>	
		Soil erosion	Topsoil erosion by rainfall after		T1	NtPathi
		Sou crosion	earth work and vegetation removal	Slightly	Temporal	Negligible
11	Surface water	Hydrological feature	Changes of flow variation	No	<u> </u>	
11	Softace water	Water use	Change of existing water use	No		
1	:	Water quality	Change of water quality	Slightly	Temporal	Negligible
		Floating debris	Floating obstacles	No	Temporar	regugiore
		Flood affection	Flood affected area	No		
12	Species and		Obstruction of valuable species and	No	 	
ا ' ا	their	/flora	their community, habitat	110		
	population,	Terrestrial wildlife	Obstruction of breeding and extinction	No	 	
	habitat	/fauna	of species, communities, habitat	1 '``	1	
	inao nat	Aquatic flora	Obstruction of valuable species	No		
	:	Aquatic fish fauna	Obstruction of breeding and extinction		Temporal	Negligible
	{		of species, communities, habitat	J. Grightly	1 cinpolai	ricgingiote
17	Aesthetics	Landscape	Changes of topography and vegetation	No No	+	
] .	ricentoneo	Editoscape	due to reclamation. Deterioration of	1 110		
			aesthetic harmony by structure	•	,	
Pol	lution		income indicated by structure	<u>. </u>	!	
	Atmosphere	Air pollution	Pollution caused by exhaust gas or	Slightly	Temporal	Control of soil dust
۱"	, similosphicite	The political	toxic gas from vehicles	Sugariy	Temporal	Control of Son disst
16	Water	Water pollution	Pollution by inflow of silt, sand and	Slightly	Tomposi	Negligible
1.0	[77.5]	erator ponution	effluent into rivers	Sugnity	Temporal	racgustote
17	Noise and	Noise and vibration	Generation by construction machinery	Slightly	Tomporel	Control operation
ļ''	vibration	1 10150 and violation	and traffic vehicles	Silgnity	Temporal	Control operation
	erall evaluation	<u> </u>	land italife veilleles		 	hour.
IUV	ctan evaluation		constant for the medical in-to	Need of	1	
		as richminary EIA no	cessary for the project implementation	Pre ElA	1	

	nvironmental		Description	IEE	Preliminary	Remarks (Reason)
	component	activitles	of activities	evaluation	EIA evaluation	
-	o economic Er			; ;		·
1	Land and	Land aquisition	Transfer of right of land ownership	No		
1	Property		compensation			
l		Resettlement	Transfer of rights of residence /	No		
			compensation			
2	Economic	Economic	Loss of basis of economic activities,	No		:
ı		activities	such as land, and change of economic			
- 1			structure			•
		Employment	Increase or decrease of employment	No		
	•		opportunity			
3	Traffic and	Traffic	Impact on present traffic conditions,	Temporal	:	Partial use of deck
	Public facilities		increase of traffic congestion	z vinpota,		space
1	1 dono racinito	Public facilities	Impacts on schools, hospitals caused	No		Space
		r done facilities	by increase of traffic volume	110		
-	Communities	Disintegration of	Community split due to interruption	No		
	Communics		of area traffic	NO		
		communities		T		A anthonic and distant
	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
-		Historical assets	Damage or loss of the value of	No		
	Cultural		historic or archaeological remains			
		Cultural properties	Damage or loss of the value of	No		
			cultural assets			
7	Vested rights	Water rights and	Obstruction of fishing rights, water	No		1.0
		rights of common	rights, or other rights of common	-		<u> </u>
8	Waste	Waste	Generation of construction and	No		
. }			demolition debris			
9	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
Na	ural Environn	nent				
10	Land	Topographic feature	Changes of valuable topographic	No		
	1.2	/river bank and bed	land form condition		- '	
	i	Geological condition	Changes of geological condition	No	1.1	
		Land use	Change of original land use	No -	4.4	
		Soil crosion	Topsoil erosion by rainfall after	No		
			earth work and vegetation removal			.*
11	Surface water	Hydrological feature	Changes of flow variation	No		
* *	Surface Water	Water use	Change of existing water use	No		
•		Water quality	Change of water quality	No		
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		}
15	C					
12	Species and	Terrestrial vegetation		No	-	1 1
	their	/flora	their community, habitat			
	population,	Terrestrial wildlife	Obstruction of breeding and extinction	No		<u>'</u>
	habitat	/fauna	of species, communities, habitat			
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction	No		
			of species, communities, habitat			<u></u>
13	Aesthetics	Landscape	Changes of topography and vegetation	No		
	Ĭ		due to reclamation. Deterioration of			
	1		aesthetic harmony by structure			
Po	lution					
	Atmosphere	Air pollution	Pollution caused by exhaust gas or	No		
	minospinore	- in political	toxic gas from vehicles	```		· · ·
	<u> </u>	Water pollution	Pollution by inflow of silt, sand and	No	 	
	Mate-	Mater boundon		110	1	
	Water				•	1
16		<u> </u>	effluent into rivers			
16	Noise and	Noise and vibration	Generation by construction machinery	No		
16 17				No No need of		

o	iviconmentai component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
cio	economic En	vironment				
	and and Property	Land aquisition	Transfer of right of land ownership compensation	No		
		Resettlement	Transfer of rights of residence / compensation	No		
ate	conomic	Economic	Loss of basis of economic activities,	No	***************************************	
	eonomic .	activities	such as land, and change of economic		!	
		Employment	structure Increase or decrease of employment	No	<u> </u>	
┸			opportunity			
	raffic and ublic facilities		Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4 (Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
. 	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
61	listorical and	Historical assets	Damage or loss of the value of	No		Aestrictic Condition
	Cultural	Cultural properties	historic or archaeological remains Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
ol ,	Waste	Waste	Generation of construction and	No		
			demolition debris			
	Hazards	Risk and damage	Risk of accidents, traffic damage	No	L	<u>]</u>
	ural Environn					
O]	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
١		Geological condition	Changes of geological condition	No		
1		Land use	Change of original land use	No		
ļ		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	No		
ıÌ.	Surface water	Hydrological feature	Changes of flow variation	No	<u> </u>	
Ì	Bollaco matel	Water use	Change of existing water use	No		
ı		Water quality	Change of water quality	No		
١		Floating debris	Floating obstacles	No		
ĺ		Flood affection	Flood affected area		 	
	Species and	Terrestrial vegetation	Obstruction of valuable species and	No No		
1	their population,	/flora Terrestrial wildlife	their community, habitat Obstruction of breeding and extinction	n No		
- 1	habitat	/fauna	of species, communities, habitat		<u> </u>	
١		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities, habitat	1		
3	Aesthelics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	n No		
ol	lution	*	,	* .		
	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	No		
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	No	<u> </u>	
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	y No		
700	rall evaluation	<u>. I </u>	The state of the s	No need o	/	
<i>,</i> ,,	.run evaluatioi		ecessary for the project implementation		`	1

Environmental	Identification of activities	Description of activities	IEE	Preliminary	Remarks (Reason)
component		of activities	evaluation	EIA evaluation	
ecio economic En					
Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
rioperty	Resettlement	Transfer of rights of residence /	No		······································
		compensation	110		
2 Economic	Economic	Loss of basis of economic activities,	No		
		such as land, and change of economic			
		structure		•	
	Employment	Increase or decrease of employment	No		
		opportunity			
3 Traffic and	Traffic	Impact on present traffic conditions,	Temporal		Partial use of deck
Public facilities		increase of traffic congestion			space
	Public facilities	Impacts on schools, hospitals caused	No		
		by increase of traffic volume			
4 Communities	Disintegration of	Community split due to interruption	No		
	communities	of area traffic		İ	
5 Amenity	Amenities	Increase or loss of existing amenities	Increase	·	Aesthetic conditio
6 Historical and	Historical assets	Damage or loss of the value of	No		
Cultural		historic or archaeological remains			
	Cultural properties	Damage or loss of the value of	No		
		cultural assets			
7 Vested rights	Water rights and	Obstruction of fishing rights, water	No		
. 1	rights of common	rights, or other rights of common			
8 Waste	Waste	Generation of construction and	No		
		demolition debris			
9 Hazards	Risk and damage	Risk of accidents, traffic damage	No		
latural Environs	nent	Control of the Contro			
10 Land	Topographic feature	Changes of valuable topographic	No	,	
	/river bank and bed	land form condition			
	Geological condition	Changes of geological condition	No		
	Land use	Change of original land use	No		
	Soil erosion	Topsoil erosion by rainfall after	No		
		earth work and vegetation removal	<u> </u>		
11 Surface water		Changes of flow variation	No		
	Water use	Change of existing water use	No	<u> </u>	, i
	Water quality	Change of water quality	No		
1	Floating debris	Floating obstacles	No	<u> </u>	
	Flood affection	Flood affected area	No		<u> </u>
12 Species and	Terrestrial vegetation		No	1	
their	/flora	their community, habitat	 	1	<u> </u>
population,	Terrestrial wildlife	Obstruction of breeding and extinctio	n No		
habitat	/fauno	of species, communities, habitat	 	<u> </u>	
-	Aquatic flora	Obstruction of valuable species	No		_
1	Aquatic fish fauna	Obstruction of breeding and extinction	n No		
		of species, communities, habitat	 		
13 Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of	n No		*
			1		
S-10 41	<u> </u>	aesthetic harmony by structure		<u>.L</u>	<u> </u>
Pollution	11.	Srs. 11	<u> </u>		
15 Atmosphere	Air pollution	Pollution caused by exhaust gas or	No	1	1
	1,,,	toxic gas from vehicles	+	ļ. <u></u>	_
16 Water	Water pollution	Pollution by inflow of silt, sand and	No		1
		effluent into rivers	 -	ļ	_
17 Noise and	Noise and vibration	Generation by construction machiner	y No		
vibration	1	and traffic vehicles	<u> </u>		
Overall evaluation			No need o		}
	Le Draliminary FIA o	ecessary for the project implementation	? Pre-EiA	ı	1

(Replacement: existing TM bridge

io.	Environmental component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
O¢.	o e conomic Er	vironment				
1	Land and	Land aquisition	Transfer of right of land ownership	Yes	If private	Need of
	Property	•	compensation		land	compensation
ı		Resettlement	Transfer of rights of residence /	No		
			compensation			
7	Economic	Economic	Loss of basis of economic activities,	No		
~	Leononia	activities	such as land, and change of economic	110		•
		activities	Istructure			
	4,	Employment	Increase or decrease of employment	No		
ļ		Employment		110	<i>:</i>	
_	TO CC 3	T. C.	opportunity		<u> </u>	** * * * * * * * * * * * * * * * * * * *
	Traffic and	Traffic	Impact on present traffic conditions,	Temporal	Temporal	Use of existing brid
- 1	Public facilities		increase of traffic congestion			as a detour route
- 1		Public facilities	Impacts on schools, hospitals caused	No		
			by increase of traffic volume			
4	Communities	Disintegration of	Community split due to interruption	No		
		communities	of area traffic			
	Amenity	Amenities	Increase or loss of existing amenities	Increase	Enhance	Aesthetic condition
6	Historical and	Historical assets	Damage or loss of the value of	No		
C	Cultural		historic or archaeological remains			
		Cultural properties	Damage or loss of the value of	No		
	:		cultural assets	1.77		, i
7	Vested rights	Water rights and	Obstruction of fishing rights, water	No	· · · · · · · · · · · · · · · · · · ·	
•		rights of common	rights, or other rights of common			
8	Waste	Waste	Generation of construction and	Yes	Temporal	Obligation to the
_			demolition debris		14/110/0101	construction side
Q	Hazards	Risk and damage	Risk of accidents, traffic damage	Slightly	Temporal	Safety control
	tural Environs		Ittisk of accidents, frame damage	Sugnity	Temporar	Jaiety connor
	Land	Topographic feature	Changes of valuable topographic	No		
ΙU	Lano			NO		
		/river bank and bed	land form condition		·	
	•	Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after	Slightly	Temporal	Negligible
			earth work and vegetation removal			
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	Slightly	Temporal	Negligible
	44	Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and	Terrestrial vegetation	Obstruction of valuable species and	No		
	their	/flora	their community, habitat			
	population,	Terrestrial wildlife	Obstruction of breeding and extinction	Slightly	If cattle ranch	Care for cattalos
	habitat	/fauna	of species, communities, habitat	, ,	is closer	
		Aquatic flora	Obstruction of valuable species	No.		
	[Aquatic fish fauna	Obstruction of breeding and extinction		Temporal	Negligible
	i	1 tquant 113h lavna	of species, communities, habitat	0.1.6.1.1.9	Temporar	riegingione .
	1			No	_	
13	Aesthetics	Landecane	Changes of tanography and vagatation			l .
13	Aesthetics	Landscape	Changes of topography and vegetation	NO		.
13	Aesthetics	Landscape	due to reclamation. Deterioration of	No		:
		Landscape		NO		
Pol	llution		due to reclamation. Deterioration of aesthetic harmony by structure			
Pol		Landscape Air pollution	due to reclamation. Deterioration of aesthetic harmony by structure Pollution caused by exhaust gas or	Slightly	Temporal	Control of soil dust
Pel 15	llution Atmosphere	Air pollution	due to reclamation. Deterioration of aesthetic harmony by structure Pollution caused by exhaust gas or toxic gas from vehicles	Slightly		Control of soil dust
Pel 15	llution		due to reclamation. Deterioration of aesthetic harmony by structure Pollution caused by exhaust gas or toxic gas from vehicles Pollution by inflow of silt, sand and		Temporal Temporal	Control of soil dust
Pel 15	llution Atmosphere	Air pollution	due to reclamation. Deterioration of aesthetic harmony by structure Pollution caused by exhaust gas or toxic gas from vehicles	Slightly		
Pe 15 16	llution Atmosphere	Air pollution	due to reclamation. Deterioration of aesthetic harmony by structure Pollution caused by exhaust gas or toxic gas from vehicles Pollution by inflow of silt, sand and effluent into rivers	Slightly	Temporal	
Pol 15	Ilution Atmosphere Water Noise and	Air pollution Water pollution	due to reclamation. Deterioration of aesthetic harmony by structure Pollution caused by exhaust gas or toxic gas from vehicles Pollution by inflow of silt, sand and effluent into rivers Generation by construction machinery	Slightly		Negligible
Pel 15 16	llution Atmosphere Water	Air pollution Water pollution Noise and vibration	due to reclamation. Deterioration of aesthetic harmony by structure Pollution caused by exhaust gas or toxic gas from vehicles Pollution by inflow of silt, sand and effluent into rivers	Slightly	Temporal	Negligible

	nvironmental component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
	o economic En			· · · · · · · · · · · · · · · · · · ·	<u> </u>	
	Land and		Transfer of right of land ownership	No		
	Property	•	compensation			
- 1	2.10pv11.j		Transfer of rights of residence /	No		
.			compensation			·
ᆟ	Economic	Economic	Loss of basis of economic activities,	No		
-	conomic		such as land, and change of economic	. 140		
1			structure			
- 1			Increase or decrease of employment	No		
	•	Employment		MO		
_			opportunity			
			Impact on present traffic conditions,	Temporal		Partial use of deck
	Public facilities		increase of traffic congestion			space
	,	Public facilities	Impacts on schools, hospitals caused	No		
			by increase of traffic volume			1
4	Communities	Disintegration of	Community split due to interruption	No		
		communities	of area traffic			·
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and	Historical assets	Damage or loss of the value of	No		
	Cultural	* 1	historic or archaeological remains			
		Cultural properties	Damage or loss of the value of	No		
			cultural assets	ļ	·	
7	Vested rights	Water rights and	Obstruction of fishing rights, water	No		
Ĭ		rights of common	rights, or other rights of common	• • • • • • • • • • • • • • • • • • • •		
Я	Waste	Waste	Generation of construction and	No		
Ĭ		11 U.S.	demolition debris	1 '''		
O	Hazards	Risk and damage	Risk of accidents, traffic damage	No	 	
	ural Environn	nent	Misk of accidents, traffic damage	110	<u> </u>	
	Land	Topographic feature	Changes of valuable topographic	N _o	 	1
Įν	Land			No	` '	
	· · · · · · · · · · · · · · · · · · ·	/river bank and bed	land form condition	ļ <u>.</u>		
		Geological condition	Changes of geological condition	No	 -	
ļ		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after	No	·	
	-		earth work and vegetation removal		·	ļ
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
	•	Water quality	Change of water quality	No		
	•	Floating debris	Floating obstacles	No		
	+	Flood affection	Flood affected area	No		
12	Species and	Terrestrial vegetation	Obstruction of valuable species and	No		
	their	/flora	their community, habitat	Į.		
	population,	Terrestrial wildlife	Obstruction of breeding and extinction	No		
	habitat	/fauna	of species, communities, habitat			
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction		 	
			of species, communities, habitat] ''`		
13	Aesthetics	Landscape	Changes of topography and vegetation	No		
10	1 sestilettes	Editoscape	due to reclamation. Deterioration of	110		İ
						1
20	<u>I</u> Uution	J	aesthetic harmony by structure	1	<u> </u>	1
		0.0000000000000000000000000000000000000	To be a second of the second o		·	· · · · · · · · · · · · · · · · · · ·
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or	No		
	 		toxic gas from vehicles	 	1	
16	Water	Water pollution	Pollution by inflow of silt, sand and	No	1	
			effluent into rivers	<u> </u>	<u></u>	<u></u>
17	Noise and	Noise and vibration	Generation by construction machinery	No		
	vibration		and traffic vehicles	i	1	1
Ōν	erall evaluation			No need o	fi	

economic End and operty onomic	Land aquisition Resettlement Economic activities Employment Traffic s Public facilities Disintegration of communities Amenities	Transfer of right of land ownership compensation Transfer of rights of residence / compensation Loss of basis of economic activities, such as land, and change of economic structure Increase or decrease of employment opportunity Impact on present traffic conditions, increase of traffic congestion Impacts on schools, hospitals caused by increase of traffic volume Community split due to interruption of area traffic	No No No Temporal		Partial use of deck
operty onomic affic and blic facilities mmunities nenity storical and	Resettlement Economic activities Employment Traffic s Public facilities Disintegration of communities Amenities	compensation Transfer of rights of residence / compensation Loss of basis of economic activities, such as land, and change of economic structure Increase or decrease of employment opportunity Impact on present traffic conditions, increase of traffic congestion Impacts on schools, hospitals caused by increase of traffic volume Community split due to interruption	No No No Temporal		Partial use of deck
enomic affic and blic facilities mmunities nenity storical and	Economic activities Employment Traffic s Public facilities Disintegration of communities Amenities	Transfer of rights of residence / compensation Loss of basis of economic activities, such as land, and change of economic structure Increase or decrease of employment opportunity Impact on present traffic conditions, increase of traffic congestion Impacts on schools, hospitals caused by increase of traffic volume Community split due to interruption	No No Temporal		Partial use of deck
affic and blic facilities mmunities nenity storical and	Economic activities Employment Traffic s Public facilities Disintegration of communities Amenities	Loss of basis of economic activities, such as land, and change of economic structure Increase or decrease of employment opportunity Impact on present traffic conditions, increase of traffic congestion Impacts on schools, hospitals caused by increase of traffic volume Community split due to interruption	No Temporal		Partial use of deck
affic and blic facilities mmunities nenity storical and	Employment Traffic S Public facilities Disintegration of communities Amenities	such as land, and change of economic structure Increase or decrease of employment opportunity Impact on present traffic conditions, increase of traffic congestion Impacts on schools, hospitals caused by increase of traffic volume Community split due to interruption	No Temporal		Partial use of deck
blic facilities mmunities nenity storical and	Employment Traffic S Public facilities Disintegration of communities Amenities	structure Increase or decrease of employment opportunity Impact on present traffic conditions, increase of traffic congestion Impacts on schools, hospitals caused by increase of traffic volume Community split due to interruption	Temporal		Partial use of deck
blic facilities mmunities nenity storical and	Traffic s Public facilities Disintegration of communities Amenities	Increase or decrease of employment opportunity Impact on present traffic conditions, increase of traffic congestion Impacts on schools, hospitals caused by increase of traffic volume Community split due to interruption	Temporal		Partial use of deck
blic facilities mmunities nenity storical and	Traffic s Public facilities Disintegration of communities Amenities	opportunity Impact on present traffic conditions, increase of traffic congestion Impacts on schools, hospitals caused by increase of traffic volume Community split due to interruption	Temporal		Partial use of deck
blic facilities mmunities nenity storical and	Public facilities Disintegration of communities Amenities	Impact on present traffic conditions, increase of traffic congestion Impacts on schools, hospitals caused by increase of traffic volume Community split due to interruption			Partial use of deck
blic facilities mmunities nenity storical and	Public facilities Disintegration of communities Amenities	increase of traffic congestion Impacts on schools, hospitals caused by increase of traffic volume Community split due to interruption			Partial use of deck
mmunities nenity storical and	Public facilities Disintegration of communities Amenities	Impacts on schools, hospitals caused by increase of traffic volume Community split due to interruption	No		1
nenity storical and	Disintegration of communities Amenities	by increase of traffic volume Community split due to interruption	No		space
nenity storical and	communities Amenities	Community split due to interruption			
nenity storical and	communities Amenities		No		
storical and	Amenities		180		
storical and		Increase or loss of existing amenities	Increase		Aesthetic condition
	Historical assets	Damage or loss of the value of	No		Mesticite condition
,,,,,,,,	Thistorical assets	historic or archaeological remains	140	-	
	Cultural properties	Damage or loss of the value of	No		
	Cunsta proporate	cultural assets	1.0		
sted rights	Water rights and	Obstruction of fishing rights, water	No		
	rights of common	rights, or other rights of common			
aste	Waste	Generation of construction and	No		1.5
		demolition debris			1
zards	Risk and damage	Risk of accidents, traffic damage	No	· · · · · · · · · · · · · · · · · · ·	†
al Environt					.
nd	Topographic feature	Changes of valuable topographic	No		1
	/river bank and bed	land form condition			
	Geological condition	Changes of geological condition	No		
	Land use	Change of original land use	No		
	Soil erosion	Topsoil erosion by rainfall after	No		
		earth work and vegetation removal			
urface water	Hydrological feature	Changes of flow variation	No		
	Water use	Change of existing water use	No		
	Water quality	Change of water quality	No		
	Floating debris	Floating obstacles	No		
	Flood affection	Flood affected area	No		
ecies and	Terrestrial vegetation	Obstruction of valuable species and	No		
eīr	/flora	their community, habitat			
pulation,	Terrestrial wildlife	Obstruction of breeding and extinction	No		
bitat	/fauna	of species, communities, habitat			
	Aquatic flora	Obstruction of valuable species	No		
	Aquatic fish fauna	Obstruction of breeding and extinction	No		
			<u> </u>		
esthetics	Landscape		No	1	1
			,	1	
		aesthetic harmony by structure	<u> </u>	<u> </u>	
tion	Air pollution		No		
tion tmosphere	<u> </u>				<u> </u>
tmosphere			No		
	Water pollution		<u> </u>		
tmosphere /ater		Generation by construction machinery	No		
tmosphere /ater oise and	Water pollution Noise and vibration		I		•
tmosphere /ater	Noise and vibration	and traffic vehicles			<u> </u>
e:	mosphere	sthetics Landscape on mosphere Air pollution ater Water pollution sise and Noise and vibration	of species, communities, habitat Sthetics Landscape Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure Ion Mosphere Air pollution Pollution caused by exhaust gas or toxic gas from vehicles ater Water pollution Pollution by inflow of silt, sand and effluent into rivers isse and Noise and vibration Generation by construction machinery	of species, communities, habitat Sthetics Landscape Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure Ion Mosphere Air pollution Pollution caused by exhaust gas or toxic gas from vehicles ater Water pollution Pollution by inflow of silt, sand and effluent into rivers Sise and Noise and vibration Generation by construction machinery No	of species, communities, habitat Sthetics Landscape Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure Ion Mosphere Air pollution Pollution caused by exhaust gas or toxic gas from vehicles ater Water pollution Pollution by inflow of silt, sand and effluent into rivers Sise and Noise and vibration Generation by construction machinery No

	nvironmental	Identification of activities	Description of activities	IEE	Preliminary	Remarks (Reason)
	component		of activities	evaluation	ELA evaluation	
	o economic En					
	Property	· · · · · · · · · · · · · · · · · · ·	Transfer of right of land ownership compensation	No		
			Transfer of rights of residence / compensation	No		
211	Economic		Loss of basis of economic activities,	No		
		activities	such as land, and change of economic structure		:	
		Employment	Increase or decrease of employment	Increase		Const. Period
_			opportunity			
	Fraffic and Public facilities		Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
1		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
ၧ	Amazitu	Amenities		Increase	 	A 12
	Amenity	Historical assets	Increase or loss of existing amenities Damage or loss of the value of	No	 	Aesthetic conditio
	Cultural		historic or archaeological remains			
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	No		
Q	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
	ural Environs	nenf	Nisk of accidents, traffic damage	110	<u> </u>	<u> </u>
	Land	Topographic feature	Changes of valuable topographic	No	T	
ľ۷	Land	/river bank and bed	land form condition	NO		
				NT.	 	
		Geological condition	Changes of geological condition	No	ļ	<u> </u>
1		Land use	Change of original land use	No	<u> </u>	
		Soil crosion	Topsoil crosion by rainfall after earth work and vegetation removal	Tempora		Const. Period
11	Surface water	Hydrological feature	Changes of flow variation	No	1	
1		Water use	Change of existing water use	No		
- }		Water quality	Change of water quality	Tempora	1	Const. Period
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
	Species and their	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		:
	population, habitat	Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No	· · · · · · · · · · · · · · · · · · ·	
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities, habitat]	Const. Period
13	Aesthetics	Landscape	Changes of topography and vegetation	No		
			due to reclamation. Deterioration of aesthetic harmony by structure	<u></u>		
	lution	<u> </u>	and the second s			
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	Tempora	.1	Const. Period
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	Tempora	1	Const. Period
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	Тетрога	1	Const. Period
					1	1
Ŏ.	erall evaluation			Need of		<u> </u>

	Environmental		Description	IEE	Preliminary	Remarks (Reason)
	component	activities	of activities	evaluation	EIA evaluation	
_	io economic Ei		and the second second second			
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
		Resettlement	Transfer of rights of residence / compensation	No		
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
	· ·	Employment	Increase or decrease of employment opportunity	No		
	Traffic and Public facilities		Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
	Communities	Disintegration of communities	Community split due to interruption of area traffic	No	:	
	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
	Cultural	Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	No		
	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
Nat	ural Environn	nent		1.		
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
	j. e. e.	Geological condition	Changes of geological condition	No		
. [Land use	Change of original land use	No		
		Soil crosion	Topsoil erosion by rainfall after earth work and vegetation removal	No		
11	Surface water	Hydrological feature Water use	Changes of flow variation Change of existing water use	No No		
		Water quality	Change of water quality	No		
		Floating debris	Floating obstacles	No	i ·	
	:	Flood affection	Flood affected area	No	 	
	Species and their	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
	population, habitat	Terrestrial wildlife //fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
Pol	lution		**************************************	<u> </u>		
	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	No	·	
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	No		
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	No		
Ōν	erall evaluation			No need of	1	[
<u> </u>			cessary for the project implementation?			

	nvironmental	Identification of	Description	IEE	Preliminary	Remarks (Reason)
	component	activities	of activities	evaluation	EIA evaluation	
	o economic En					<u> </u>
	,	Land aquisition	Transfer of right of land ownership	No	·	
١	Property		compensation			
1		Resettlement	Transfer of rights of residence /	No		
_			compensation			
2ļ1	Economic	Economic	Loss of basis of economic activities,	No		
1		activities	such as land, and change of economic			
			structure			
ı	44	Employment	Increase or decrease of employment	Slight	Temporally	
-		* .	opportunity	increase		
31	Traffic and	Traffic	Impact on present traffic conditions,	Temporal		Partial use of deck
_ li	Public facilities		increase of traffic congestion			space
- [i sa a la la la la la la la la la la la la	Public facilities	Impacts on schools, hospitals caused	No		
١			by increase of traffic volume			
40	Communities	Disintegration of	Community split due to interruption	No		
-1	** ** * * * * ** ** ** ** ** ** ** ** *	communities	of area traffic			
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic conditio
		Historical assets	Damage or loss of the value of	No		
	Cultural		historic or archaeological remains		· ·	•
٠ إ		Cultural properties	Damage or loss of the value of	No	<u> </u>	
ı			cultural assets			
7	Vested rights	Water rights and	Obstruction of fishing rights, water	No		
	, torra rigins	rights of common	rights, or other rights of common			
8	Waste	Waste	Generation of construction and	No		
Ĭ			demolition debris	```	•	
9	Hazards	Risk and damage	Risk of accidents, traffic damage	No		·
	ural Environn	nent	Training training		<u>. </u>	<u> </u>
	Land	Topographic feature	Changes of valuable topographic	No	1	1
^~	Land	/river bank and bed	land form condition	'''		
į		Geological condition	Changes of geological condition	No		<u> </u>
		Land use	Change of original land use	No		
Į	٠	Soil erosion	Topsoil erosion by rainfall after	No		
1		Son crosion	earth work and vegetation removal	110		
11	Surface water	Hydrological feature	Changes of flow variation	No		
	Surface water	Water use	Change of existing water use	No		
		Water quality	Change of water quality	No	1	<u> </u>
		Floating debris	Floating obstacles	No		<u> </u>
		175 1 60	E() CC . 4	 	 	
12	Species and	Terrestrial vegetation	Obstruction of valuable species and	No No		
	their			100		4,
	population,	/flora Terrestrial wildlife	their community, habitat Obstruction of breeding and extinction	No	<u> </u>	
	habitat	/fauna		NO		Į
	наоная	14	of species, communities, habitat	 		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction	n No		
12	Accident	1	of species, communities, habitat	 		ļ
15	Aesthetics	Landscape	Changes of topography and vegetation	No No		
			due to reclamation. Deterioration of		1	
n .		<u> </u>	aesthetic harmony by structure	<u></u>	<u> </u>	<u> </u>
	lution					
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or	No		
		<u> </u>	toxic gas from vehicles	<u> </u>	<u> </u>	<u> </u>
16	Water	Water pollution	Pollution by inflow of silt, sand and	No		
	<u> </u>	<u></u>	effluent into rivers			
17	Noise and	Noise and vibration	Generation by construction machinery	No		
	vibration		and traffic vehicles			
			. *	+	+	· · · · · · · · · · · · · · · · · · ·
Ov	crall evaluation) .	the state of the s	No need o	f	

o	nvironmental component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
oc	o economic Er	vironment				<u> </u>
1	Land and	Land aquisition	Transfer of right of land ownership	No		
- [Property	•	compensation			
- 1		Resettlement	Transfer of rights of residence /	No		i
			compensation			
2	Economic	Economic	Loss of basis of economic activities,	No		
		activities	such as land, and change of economic	1,10		
		activities	structure			
- 1		Employment	Increase or decrease of employment	No	· · · · · · · · · · · · · · · · · · ·	
		Employment	l	180	,	
ᅱ	TD 60° 1	75 A.M.	opportunity			
		Traffic	Impact on present traffic conditions,	Temporal		Partial use of deck
ŀ	Public facilities		increase of traffic congestion			space
ı		Public facilities	Impacts on schools, hospitals caused	No	**	
			by increase of traffic volume			
4	Communities	Disintegration of	Community split due to interruption	No		
		communities	of area traffic	:		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
		Historical assets	Damage or loss of the value of	No		
	Cultural		historic or archaeological remains		·	
.		Cultural properties	Damage or loss of the value of	No		
	•	i properties	cultural assets	110		
7	Vested rights	Water rights and	Obstruction of fishing rights, water	No		
ʻl	vested rights	rights of common	rights, or other rights of common	1110		
-	Waste	Waste	Generation of construction and	<u> </u>		
0	waste	Wasic		No	•	
		D. 1 1 1	demolition debris			ļ
	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
	ural Environn					
10	Land	Topographic feature	Changes of valuable topographic	No		
		/river bank and bed	land form condition	:	•	
		Geological condition	Changes of geological condition	No		
	* [*]	Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after	No		<u> </u>
	· ·		earth work and vegetation removal			
11	Surface water	Hydrological feature	Changes of flow variation	No		
ļ		Water use	Change of existing water use	No		
		Water quality	Change of water quality	No		
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No	 	
12	Species and	Terrestrial vegetation		No		
12	their	/flora	their community, habitat	150	4	
	population,	Terrestrial wildlife		<u> </u>		
		1	Obstruction of breeding and extinction	No		'
	habitat	/fauna	of species, communities, habitat			
	,	Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction	No		
			of species, communities, habitat			
13	Aesthetics	Landscape	Changes of topography and vegetation	No		
		!	due to reclamation. Deterioration of			
	1	<u> </u>	aesthetic harmony by structure	j :	İ	}
Po	lution				 	
	Atmosphere	Air pollution	Pollution caused by exhaust gas or	No		<u> </u>
			toxic gas from vehicles	• • • • •		
		l	Pollution by inflow of silt, sand and	No		
15	Water	Water pollution		. (50)	 ** ** ** ** ** ** ** ** ** ** ** ** **	i
15	Water	Water pollution		1		i ·
15 16			effluent into rivers			
15 16	Noise and	Water pollution Noise and vibration	effluent into rivers Generation by construction machinery			
15 16 17		Noise and vibration	effluent into rivers			

Enviro o com	onmental	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason
		vironment	Of activities	CTAINATION	EDI CYAIDAUGII	<u> </u>
			The Control of the Classic Control of the Control o	No.		· · · · · · · · · · · · · · · · · · ·
1 Land		Land aquisition	Transfer of right of land ownership compensation	No		
Prope		D 11 1	Transfer of rights of residence /	No		
i				INO	e e	
		Daniel	compensation). I -		
2 Econo		4	Loss of basis of economic activities,	No		
İ	i	activities	such as land, and change of economic			
	ļ	B	structure			
ļ		Employment	Increase or decrease of employment	No		
			opportunity			
3 Traffi		Traffic	Impact on present traffic conditions,	Temporal		Partial use of decl
Publi	c facilities		increase of traffic congestion			space
		Public facilities	Impacts on schools, hospitals caused	No		
<u> </u>			by increase of traffic volume			
4 Com	munities	Disintegration of	Community split due to interruption	No		:
-		communities	of area traffic	1.1.		
5 Ame		Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6 Histo	rical and	Historical assets	Damage or loss of the value of	No		
Cultu	oral		historic or archaeological remains			
1		Cultural properties	Damage or loss of the value of	No		
			cultural assets			
7 Vest	ed rights	Water rights and	Cultural assets Obstruction of fishing rights, water	No		
1	•	rights of common	rights, or other rights of common			
8 Wast	ie.	Waste	Generation of construction and	No		
-			demolition debris			
9 Haza	irds	Risk and damage	Risk of accidents, traffic damage	No		
Natural	Environn					
10 Land)	Topographic feature	Changes of valuable topographic	No		
		/river bank and bed	land form condition	1		
ĺ		Geological condition	Changes of geological condition	No	l	
		Land use	Change of original land use	No		<u> </u>
		Soil crosion	Topsoil erosion by rainfall after	No		
-			earth work and vegetation removal	1 -		
11 Surf	ace water	Hydrological feature	Changes of flow variation	No		· · · · · · · · · · · · · · · · · · ·
** 00111	acc marci	Water use	Change of existing water use	No	 	
		Water quality	Change of water quality	No	 	
		Floating debris	Floating obstacles	No	 	
		Flood affection	Flood affected area	No	<u> </u>	
12 Spec	rice and	Terrestrial vegetation	Obstruction of valuable species and	No		
their		/flora	their community, habitat	1.00		. :
	ulation,	Terrestrial wildlife	Obstruction of breeding and extinction	n No	-	
habi		/fauna	of species, communities, habitat	10		1 1 1 1 1 1
11301	tal		Obstruction of valuable species	No		
		Aquatic flora	Obstruction of variable species Obstruction of breeding and extinction			
		Aquatic fish fauna		n N o		•
		<u> </u>	of species, communities, habitat	 ,		
13 Aest	inetics	Landscape	Changes of topography and vegetatio	n No		
			due to reclamation. Deterioration of			
		<u> </u>	aesthetic harmony by structure		<u> </u>	
Pollutio			<u> </u>		·•	·
15 Atm	osphere	Air pollution	Pollution caused by exhaust gas or	No	1	1
			toxic gas from vehicles		<u> </u>	
16 Wat	er	Water pollution	Pollution by inflow of silt, sand and	No		
			effluent into rivers		1	1
17 Nois	se and	Noise and vibration	Generation by construction machiner	y No		
vibr	ation		and traffic vehicles			
Overall-	evaluation	· · · · · · · · · · · · · · · · · · ·	in the second section is a second second second second second second second second second second second second	No need o	f	
			cessary for the project implementation			1