



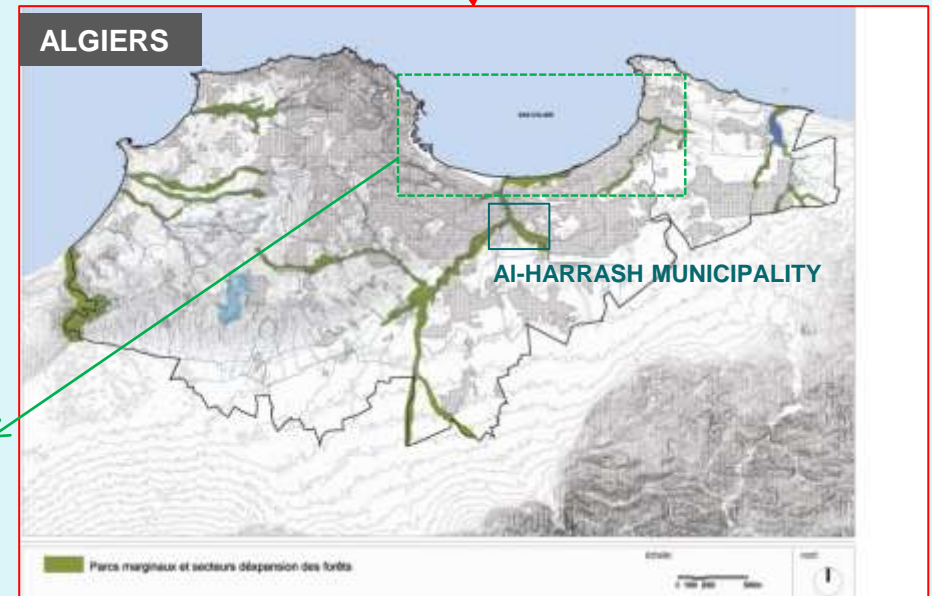
3rd INTERNATIONAL CONGRESS
WASTEWATER IN SMALL COMMUNITIES
TOWARDS THE WATER FRAMEWORK DIRECTIVE (WFD) AND THE MILLENNIUM DEVELOPMENT GOALS (MDG)
25th to 28th, April 2011 - Seville (Spain)

THE WASTEWATERS MANAGEMENT IN ALGIERS. WHEN THE RURAL BECOMES ENCRUSTED IN THE URBAN. AL-HARRASH MUNICIPALITY CASE STUDIED.

N. AROUA, E. BEREZOWSKA-AZZAG

POLYTECHNICAL SCHOOL OF ARCHITECTURE AND URBAN PLANNING- ALGIERS. ALGERIA

ALGERIA, ALGIERS, al-Harrash municipality

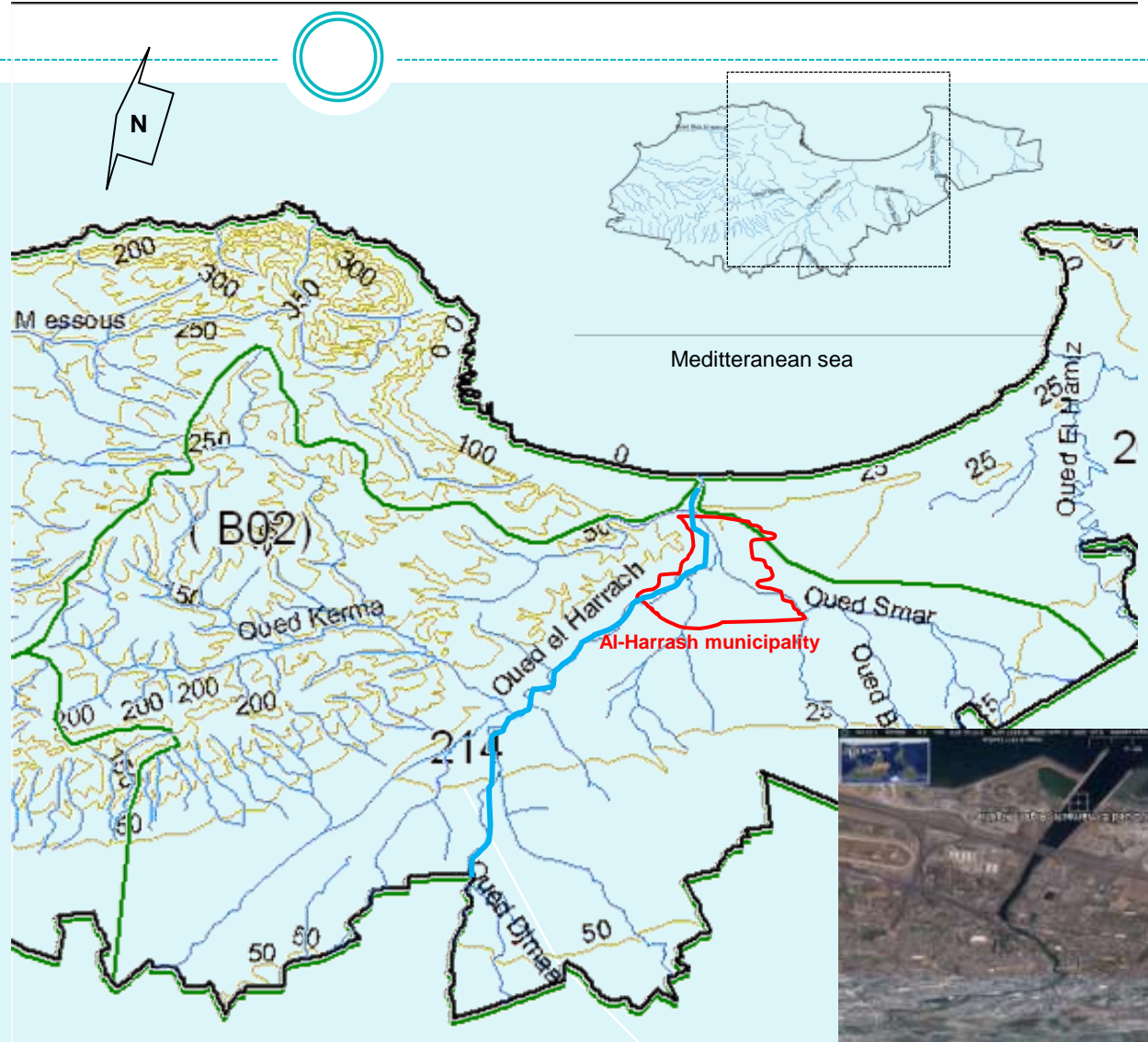


LOCAL PRECARIOUSNESS AND INSALUBRITY



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WHAT'S HAPPENING LOCALLY?



Water related risks: scarcity, pollution, flood

WATER RELATED RISKS



CURRENT WASTEWATERS NETWORK

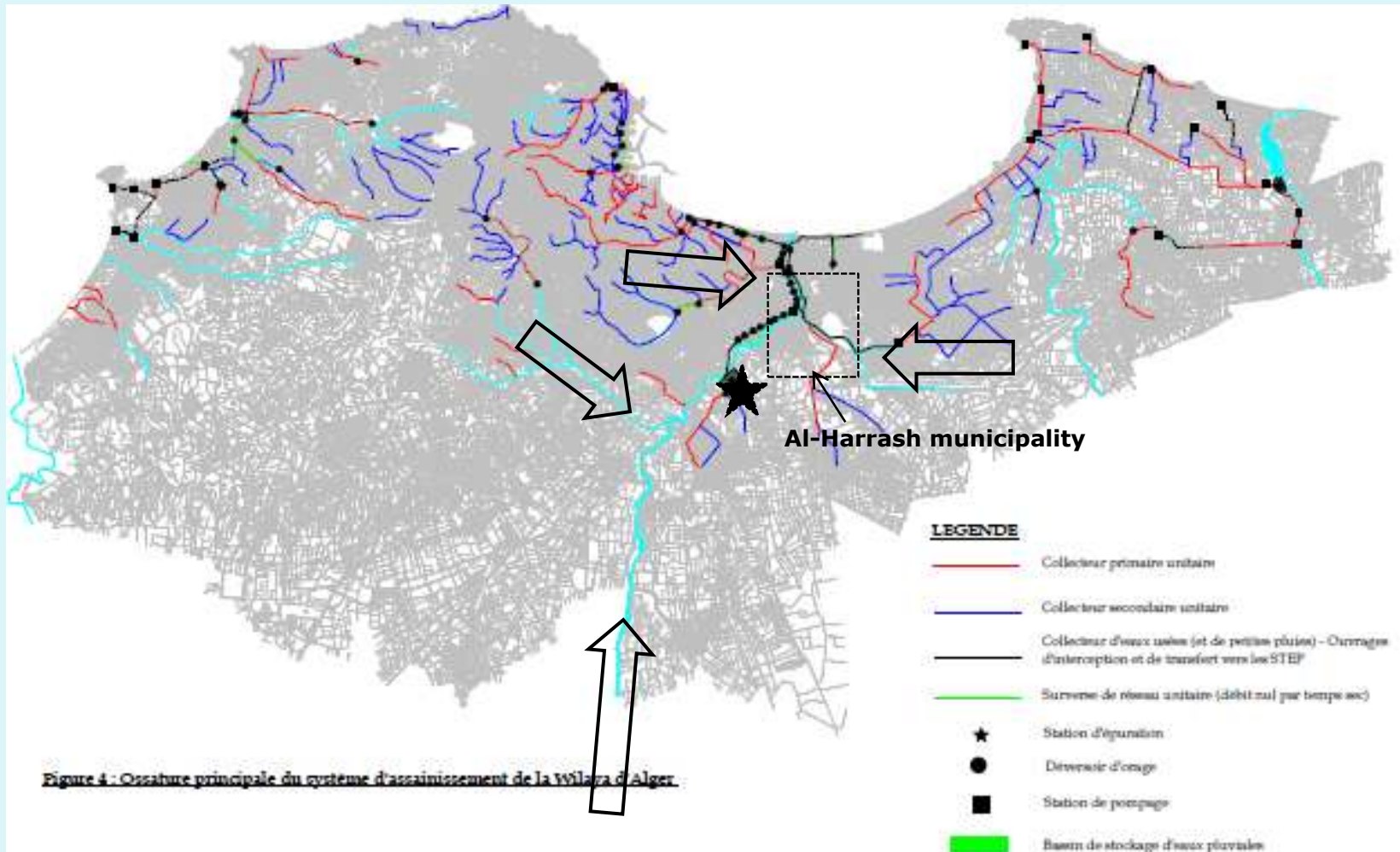


Figure 4 : Ossature principale du système d'assainissement de la Wilaya d'Alger.

THE WASTEWATERS STATION



WHAT'S THE MATTER MOST?

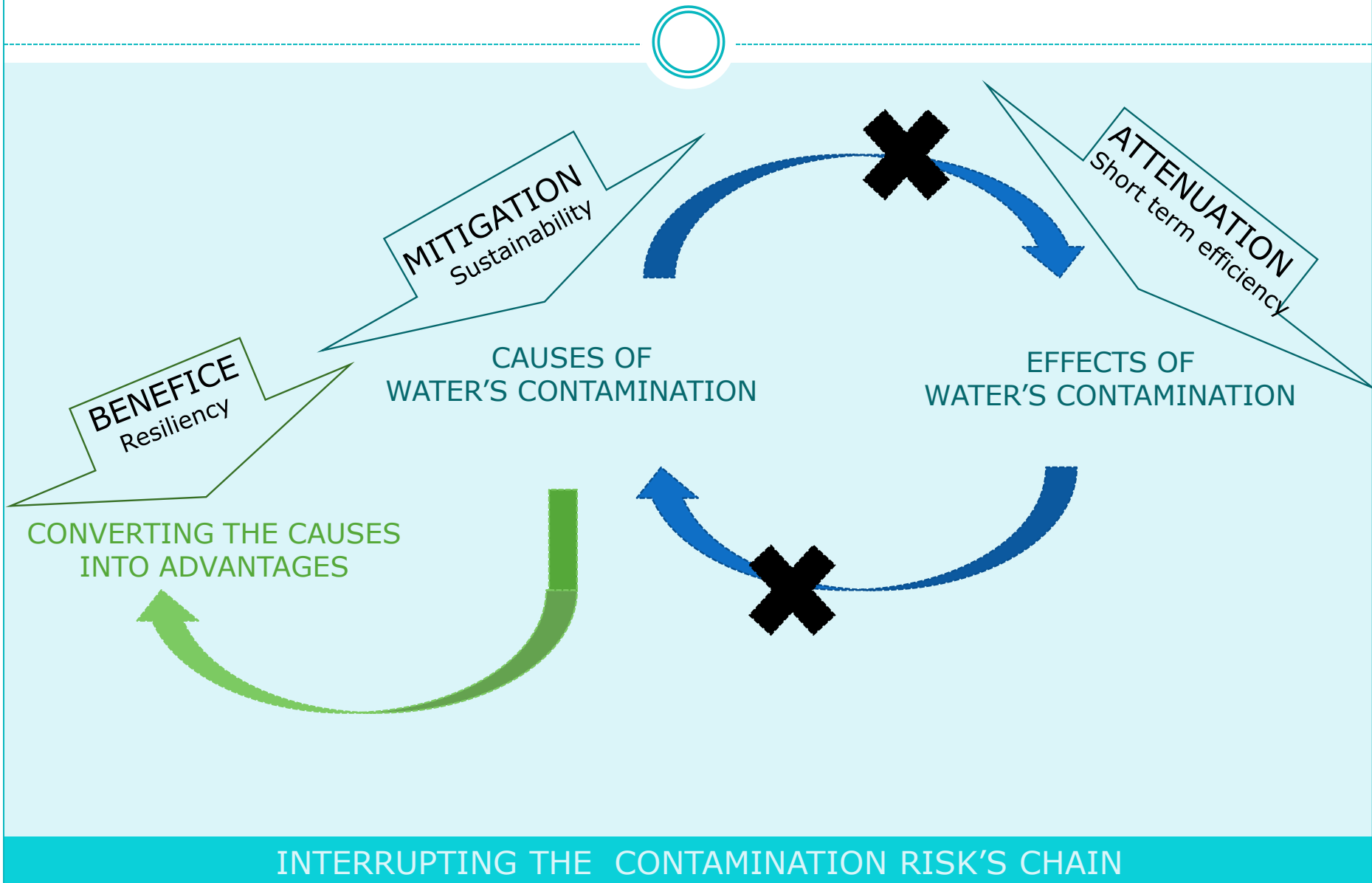


THE FIVE STEPS OF THE WASTEWATERS SYSTEM WITHIN THE PRECARIOUS SITES

Collecting	Private arrangement without any technical control
Draining	Directly towards the river. Or : Unlawfully connected to the public network
Sweetening	If drained, partly treated in the regional station
Transferring back to the river	From the station or the draining pipes towards the river
Reusing	For now no at all adopted



WHAT CAN WE DO?



ASSESSING CRITERIA



MULTICRITERIA ANALYSIS AFTER THREE MEANING VALUES

Short term efficiency: attenuating the effects
Medium term sustainability: mitigating the causes
Long term resiliency: taking advantage from the wastewaters

5	The measures exist and improve the local resiliency	Resiliency objectives are reached
4	Sustainable measures exist but are insufficient or not applied	Mismanagement + Lack of material or human means
3	Efficient measures exist and attenuate the effects	Only technical means are available
2	Efficient measures exist but are insufficient or not applied	Lack of material or human means
1	Sustainable strategy exists but is not applied	neither regular nor operational tools exist

MULTICRITERIA ANALYSIS TABLE



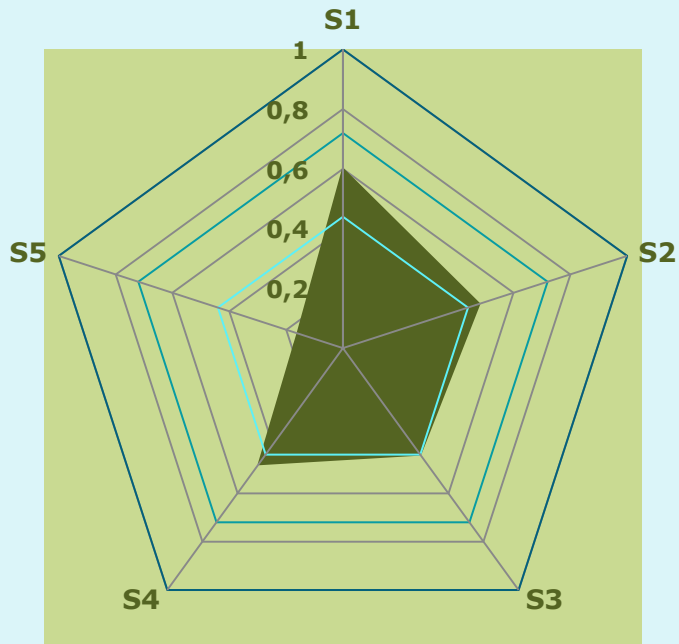
The wastewaters strategy tools		The system's five steps					Performance tool's mark (PT /25)	Performance tool's index (IPT)
		Collecting	Draining	Sweetening	Transferring back to the river	Reusing		
		S1	S2	S3	S4	S5		
Legal tools	T1	4	4	2	4	1	15	0.60
Planning tools	T2	4	4	4	2	1	16	0.64
Management process	T3	3	2	2	2	1	10	0.40
Technical means	T4	3	2	3	2	1	11	0.44
Step's performance mark (PS /25)		14	12	11	10	04	Performance's mark /25	objectives reached
Step's performance index (IPS)		0.56	0.48	0.44	0.40	0.16		
							11 < PS ≤ 18	Middle term
							18 < PS ≤ 25	Long term

PERFORMANCE INDEX



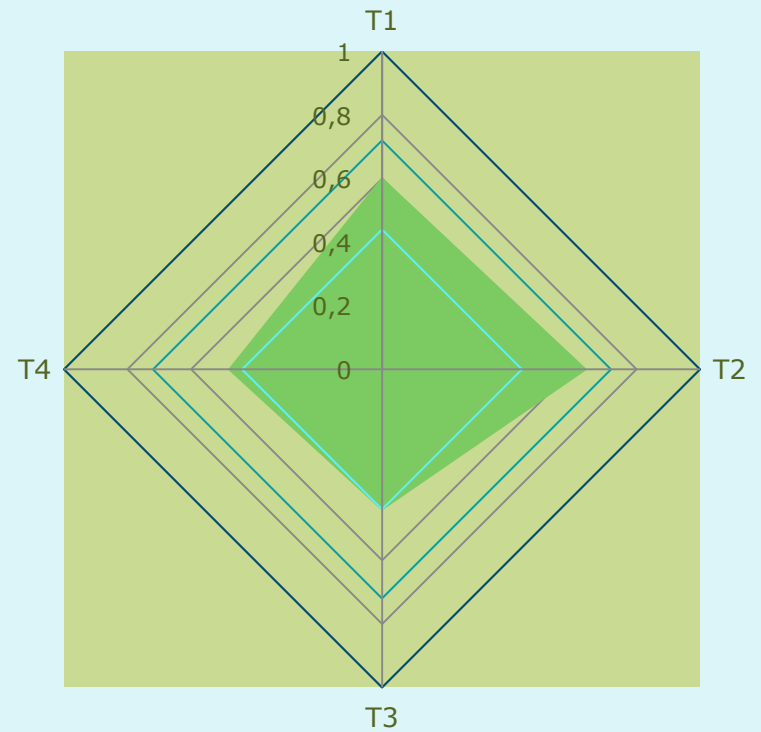
Ips

- IPS
- ST PERFORMANCE
- MT PERFORMANCE
- LT PERFORMANCE



Ipt

- IPT
- ST PERFORMANCE
- MT PERFORMANCE
- LT PERFORMANCE



CONCLUSION

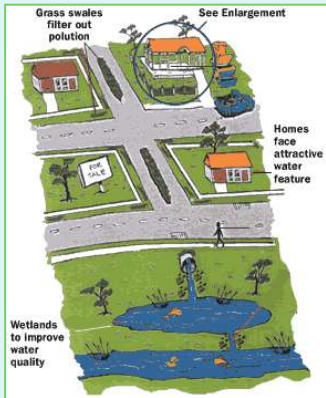


FROM THE POINT OF VIEW
OF THE WASTEWATERS MANAGEMENT STRATEGY

NEED FOR IMPROVING THE MANAGEMENT
AND TECHNICAL PROCESSES
TO GUARANTEE THE SUSTAINABILITY
AND URBAN LOCAL RESILIENCY



LOW IMPACT TECHNOLOGIES

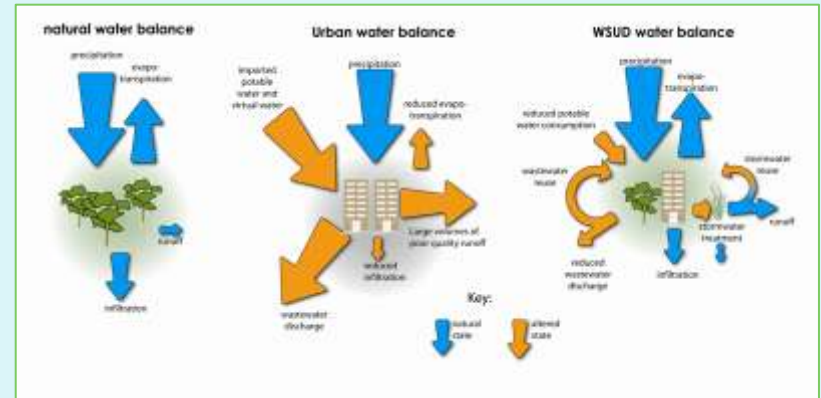


FROM THE POINT OF VIEW
OF THE URBAN PLANNING STRATEGY

NEED FOR IMPROVING THE
SPATIAL LAND USE TO REDUCE
AND PARTLY FILTER THE
WASTEWATERS' VOLUME



WATER SENSITIVE URBAN DESIGN



ANTICIPATED RESULT



RESTORING THE RIVER SYSTEM
IMPROVING THE PUBLIC HYGIENE
REDUCING THE WATER RELATED RISKS