



AYALON RIVER: OR-YEHUDA - HEMED SECTION

Integrated Flood Retention Basin Developed as a "Riverpark" for the People

1 DISTINCT URBAN GEOGRAPHICAL UNIT

- Part of the Ayalon Basin, which drains approx. 800 km².
- Very distinct urban geographical unit along Ayalon River and Beit Arif tributary - between highway #4 and Ariel Sharon Metropolitan Park (west), Yehud's cemetery and the International Airport (east) the city Or-Yehuda (north) and moshav Hemed (south).
- 6.5 kilometers in length. 1.7 km². Very moderate slope of 0.3-0.4%.
- Downstream will be connected to the Ariel Sharon Park which is being developed and managed separately.
- To the east, the rivers upstream are totally destroyed forever by a cemetery (Beit Arif Stream) and by extremely heavy engineering works done in the past in order to divert the Ayalon River from Ben Gurion International Airport.
- Or-Yehuda is a heterogeneous city, in the process of rapid growth.
- Hemed is a Moshav comprised mostly of Jewish Orthodox religious residents.

- **Drainage Management:** This stretch of the Ayalon River is a key part of the basin and the efforts to moderate the effect of extreme weather events, which have been exacerbated by climate change, on residents surrounding the basin and especially the Ayalon Highway and Railway which flood almost seasonally. The flood retention basins are part of an array of retention basins in the Ayalon catchment.
- Establishing two drainage retention basins that simultaneously lower the drainage basin for Or-Yehuda allow it to continue its rapid growth and smooth the peak flow in extreme weather events while retaining the river natural bends.



- Linking close but separated communities through a shared space and experience.
- Connecting local residents to the river that until now has been a neglected dirty backyard.
- Moderating extreme weather events effects on the basin and on the adjacent municipalities which periodically experience flooding, and allowing their continued growth.
- Sustainably restoring the river, re-establishing a functioning ecological system and removing invasive species.
- Providing a large multi-functional green space for leisure.



STAGES:

- Updating sustainable planning of the initial concept and plan, together with stakeholders and public participation, and in collaboration with the Israel National Land Authority Planners (same planners on our team too) – 1 year
- Simultaneously developing a program for public mobilization and education.
- Implementing detailed program for community mobilization and bringing together different cross sections of the local population – 9 years.
- Simultaneously detailed planning and implementation of flood retention basins and metropolitan park – 5 years.

2 A CLEAR VISION - RECLAIMING A NEGLECTED BACKYARD IN THE CENTER OF ISRAEL FOR THE PEOPLE

Reclaiming a neglected backyard that has been 'forgotten' by most residents of the surrounding area to create a river that has multiple functions and goals including:

- An Attractive Green Space by developing a continuous modern metropolitan park, despite all the infrastructure and building plans that threaten the river corridor, based on the general concept developed by the Drainage Authority, and in collaboration with all partners.
- Developing the park as a focal point for the adjacent communities, through education and public participation of all age groups.
- Improving drainage for the whole basin and locally by lowering the drainage basin and constructing a flood retention basin, crucial on the catchment level.
- Restoring the eco-system by cleaning up the river and its surrounding by preservation of a few meanders, using soft engineering methods, reestablishing endemic species that have been pushed out by agriculture and getting rid of invasive species.

- **River Restoration:** Creating a comprehensive plan, in collaboration with all infrastructure planners along the river, to clean up the area from all the refuse and rubbish that has accumulated over years of neglect, physical removal of waste and reintroduction of endemic river vegetation.
- **Modern Metropolitan Park:** Establishing an extensive and continuous park that is appropriate to the area in culture, landscape and history that simultaneously serves as a flood retention basin. Development will be according to sustainable ecological principles. A part of the area has an approved statutory plan, and partners, which will allow quick implementation in that part.



5 INNOVATIVE INTEGRATION OF DIVERSE USES

- The innovative plan proposes 'hiding' a flood retention basin in plain sight. Integrating it into a park so that only during extreme weather events is a novel implementation in Israel where flood retention basins almost don't exist, and especially not in urban agglomerations.
- Visitors to the park won't know that it serves also as a soft engineering solution for major floods.
- This integration of uses is at the forefront of catchment management in Israel.

6 SUSTAINABLE LONG-TERM MANAGEMENT OF THE RESTORED AREA

- Long term management and maintenance will be implemented by establishing a Non-Institutional voluntary administration headed by the Yarkon Drainage Authority, together with the local municipalities, the National Land Authority, and the National Aviation Authority.
- Administrative skeleton with low running costs that contracts with consultants on demand.

7 INITIAL BUDGET AND TIMETABLE ESTIMATE

The total requested budget is 80 million NIS:

- 60 million NIS for ecological and landscaping of river-beds and the park (6 years)
- 10 million NIS for program for public mobilization and participation, capacity building and educational work (10 years)
- 10 million NIS for planning and management (10 years)
- The Israel National Land Authority has already funded extra 60 million NIS for initial earthwork of the park and flood retention basin according to an existing statutory plan on part of the area (only adjacent to their plan in southern Or Yehuda).
- In the east of the area the National Aviation Authority is funding planning (and will fund implementation) for the Beit Arif stream so it can improve its drainage and expand the airport.

8 A VERY EXPERIENCED MANAGEMENT AND PLANNING TEAM

- The partner of Yad Hanadiv is the Yarkon Drainage Authority, which has a major role in planning, management and implementation, of the drainage concept and projects in the most densely populated area in Israel.
- The work with the people will be done in collaboration with the 'The Council for a Beautiful Israel' and 'Zalul', with over 20 years of experience in this field all over Israel.
- Most members are already involved in this project.
 - Head of Planning Team: Arch. Amos Brandeis – over 25 years of experience in planning and managing river restoration projects all over Israel, including manager and chief planner of the 2003 International Thiess Riverprize Alexander River Restoration Project; consultant, and workshop leader on river restoration over 5 continents; former chairman of Israel Planners Association (2006-2012). Head of planning team of this river section, since 2012.
 - Community Mobilizing Consultant: Dalia Tal (Zalul) – Zalul has 20 years of experience organizing public campaigns for the environment, mobilizing communities and volunteers for environmental causes (Zalul non profit organization).
 - Sustainable development and maintenance advisor: Prof. Alastair Driver - Former Head of Conservation for the UK Environment Agency, and one of the most experienced and highly regarded river and wetland restoration specialists in Europe. Twice winner of the International Riverprize (Australia) for the Mersey and the Thames rivers in the UK.
 - Ecologist: Dr. Ron Frumkin – A biologist, ornithologist and ecologist by profession, he has undertaken many floral and faunal surveys and conducted hundreds of EIAs on various topics, including works on river restoration and conservation.
 - Landscape Architect: Ziv Gadon (Merhavim Ltd) – Landscape Architect with an artistic background, has experience over a wide range of projects that integrate urban spaces with the surrounding natural environment.
 - Drainage Engineer: Avri Livneh – Water engineer with over 30 years of experience in river planning in Israel and abroad (Palgei Maim Ltd).



3 COMMUNITY MOBILIZATION, BASIN WIDE DRAINAGE MANAGEMENT AND RIVER RESTORATION – KEY ISSUES OF THE MULTI-DISCIPLINARY APPROACH

- Mobilization and bringing together communities: Developing a multipronged approach, through partnerships with 'The Council for a Beautiful Israel' and The nonprofit 'Zalul', that is able to mobilize local volunteers to participate in the planning process and on an enduring effort to restore and maintain the river. Engaging a broad demographic through diverse activities in schools, by the river and social and classic media campaigns that empower the different communities and call them to action. Producing work that documents the multi-disciplinarian action of restoring the river and upgrading the park.

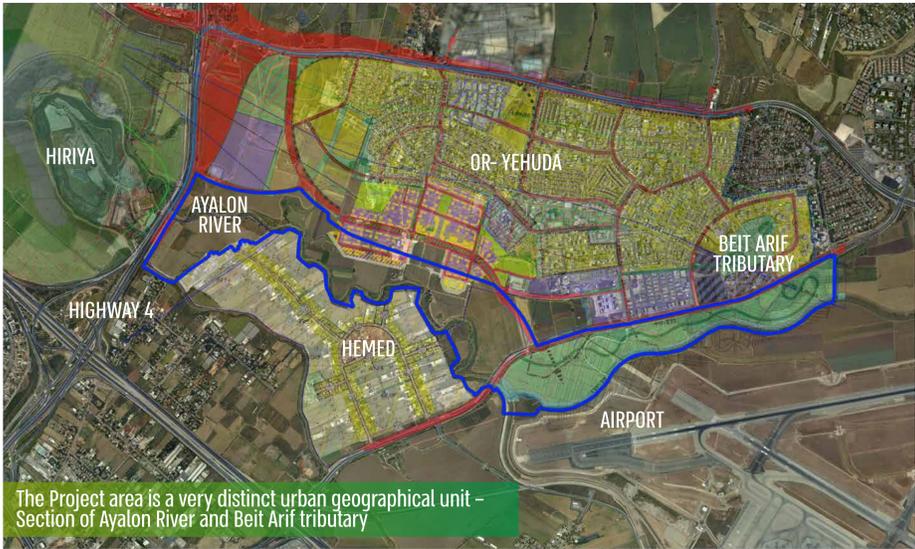
4 MAXIMIZING THE BENEFITS TO THE SURROUNDING PEOPLE AND THE LOCAL ENVIRONMENT

- There is great risk of inaction at this time as there are also many statutory plans for infrastructures in this corridor – Highway #46, new plans for further development of the International Airport, a gas station, A Metro Line underneath the park, High voltage power lines, Water and more, which may impede the restoration of the river and the development of the sustainable park forever - a concrete channel instead of a continuous river park, with a diverse eco-system.
- Strengthening communities through shared actions and responsibilities for the river and park.

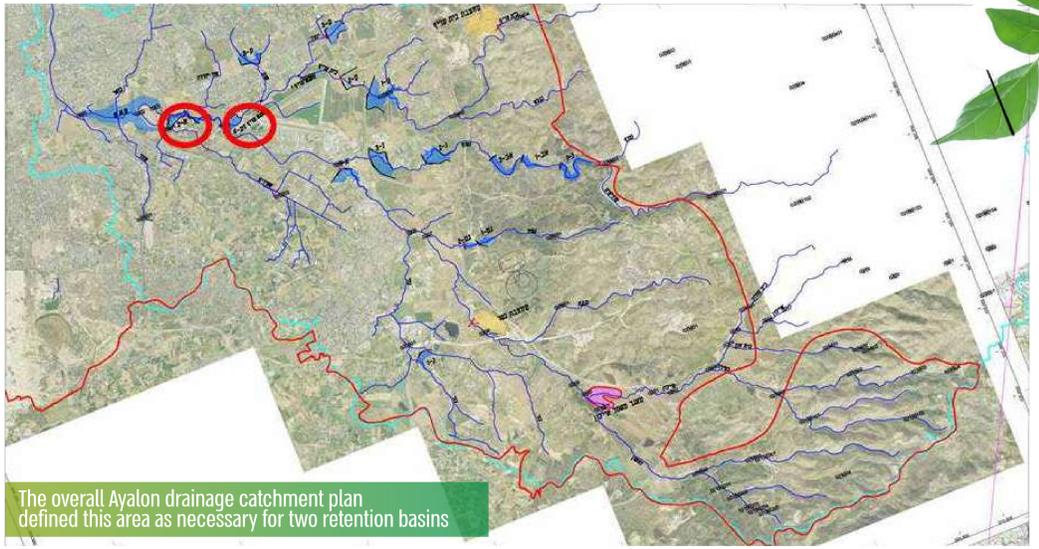


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The Project area is a very distinct urban geographical unit - Section of Ayalon River and Beit Arif tributary



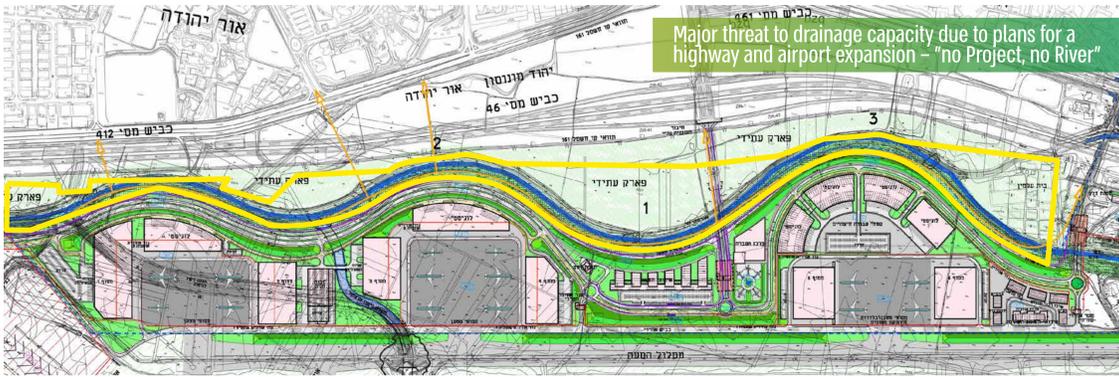
The overall Ayalon drainage catchment plan defined this area as necessary for two retention basins



Major floodplain between the international airport and Or Yehuda city



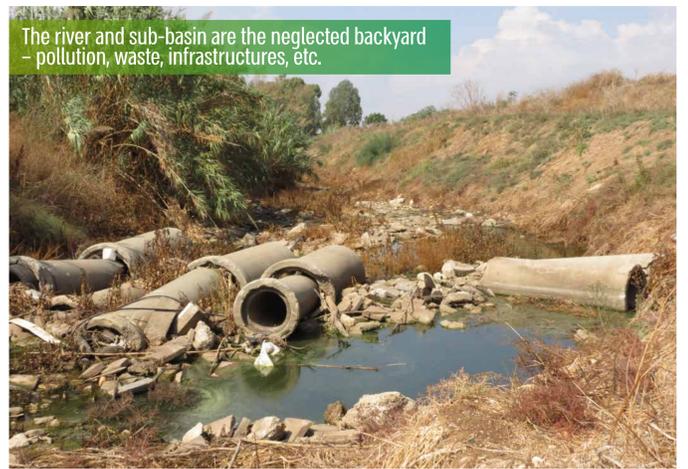
Increasingly frequent extreme weather events threaten the major highways of Israel and nearby urban areas



Major threat to drainage capacity due to plans for a highway and airport expansion - "no Project, no River"



The concept plan to develop a river park which will function also as two retention basins during floods



The river and sub-basin are the neglected backyard - pollution, waste, infrastructures, etc.



A successful pilot of an educational school program to plan the river park



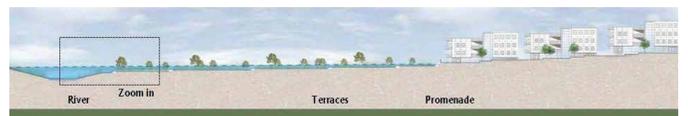
Beautiful river section with threatened meanders that still exist



The river is still alive...



Conceptual section of the retention basin park "before and after the flood"



Conceptual section of the retention basin park "during the flood"

