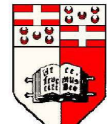


Investigating Crime: giving a spatio-temporal hand to social and landuse decision makers

Conference - LOCATION: Exploiting the Benefits
05 December 2008



INSTITUTE OF FORENSIC STUDIES
(University of Malta)

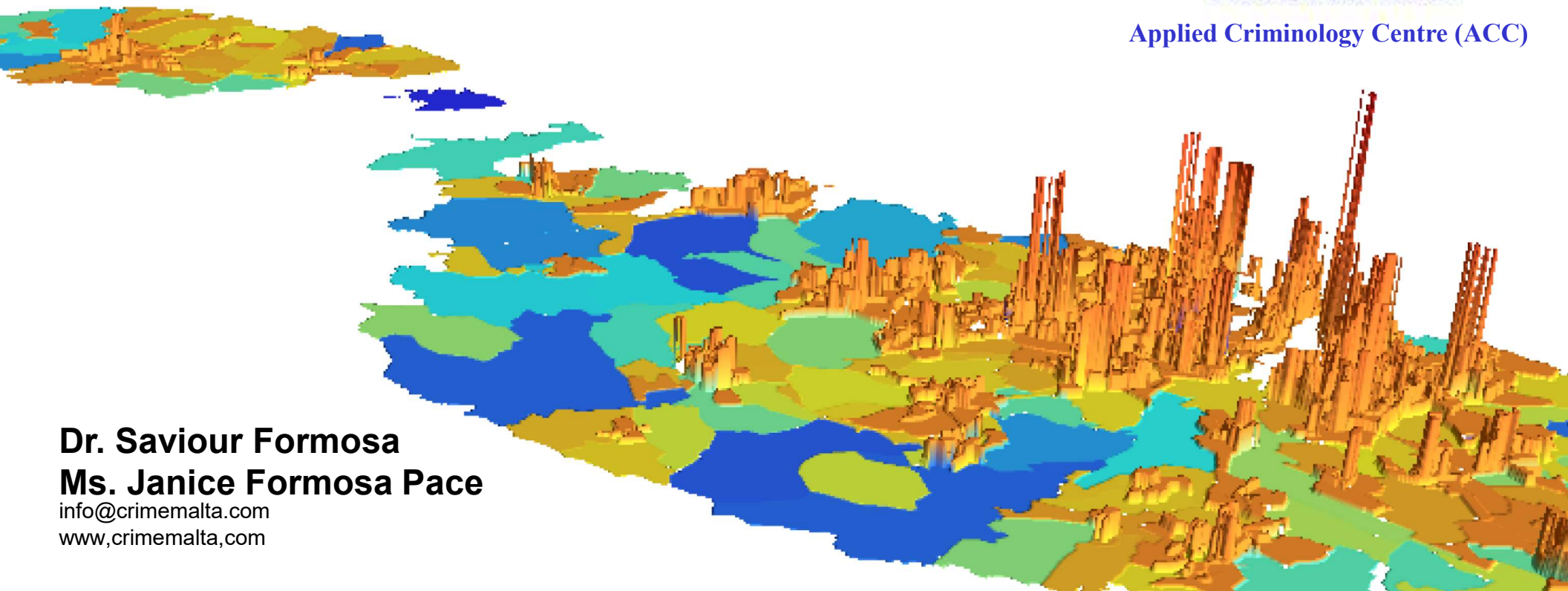


University of
HUDDERSFIELD

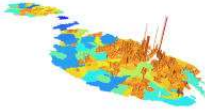
Applied Criminology Centre (ACC)

Dr. Saviour Formosa
Ms. Janice Formosa Pace

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GI Theories: Are they real theories or mere acolytes?



Are there any real GI theories?

Are GI 'theories' seen as a basis for implementing other discipline's theories?

Luckily, there ARE GI theories that are based on:

- the concept of spatial reasoning and locational choice: seeing beyond reality
- expansion of the Hierarchical spatial reasoning: aggregation
- conceptualising information and data in a visual 3D spatial cognitive approach
- multidimensional models of perception and cognition
- external validity as against laboratory experiments
- spatial information theory – model-based spatial modeling
- spatio-temporal conceptualisation
- spatial distribution and nearest neighbours
- spatial-statistical approach

Such theories encompass disciplines such as: mathematical psychology, economics, game theory, marketing, cognitive science, sociology, critical theory, health, demography and criminology. These are coming around to embrace spatial decisions, processing and reasoning, spatio-temporal approaches and discrete choice modeling.

Growth in the latest theoretical literature is based on spatial choice, processing and reasoning, taking the geographical perspective as the focal point of argumentation.



For GI Social Scientists such is our nightmare!



What
When
Why
Who
How

Where?

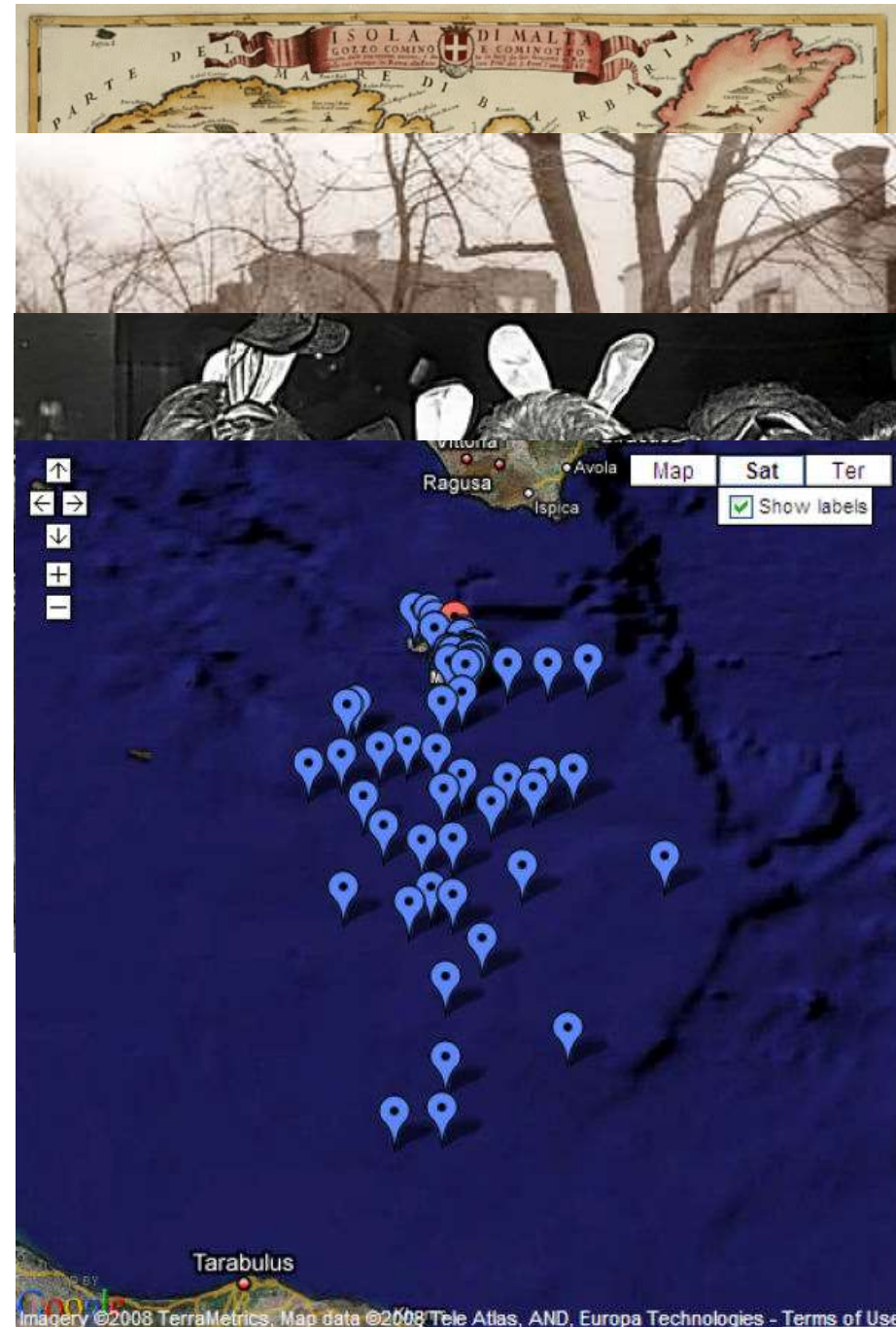
It is no easy matter to get security agencies to visualise the impact of spatial information



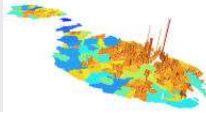
Some Historical Issues: The Malta and Gozo connection



- **Pirates** – 10th Cent onwards – Malta's notorious industry: the best in their trade
- **Bootleggers** – Prohibition: 1920-30s
- **Kings of Crime** - Soho: 1950s onwards
- **Terrorism** – 23rd November 1985, Egyptair hijacking - >60 dead
- **International Murder** - 1995, Fathi Shaqaqi, Sliema – Palestinian Islamic Jihad founder
- **Mafia-related** – 1920s-00s: US and Sicilian
- **Illegal Immigration** - 2000s: the networks



Zooming In: The State of Play



Population: 410,000

(Demographic Review, 2007)

Households: 140,000

(Census, 2005)

Land area: 316 Km²

(MEPA, 2008)

Land cover: 27% - 85 Km²

(MEPA, 2005)

Dwellings: 192,000

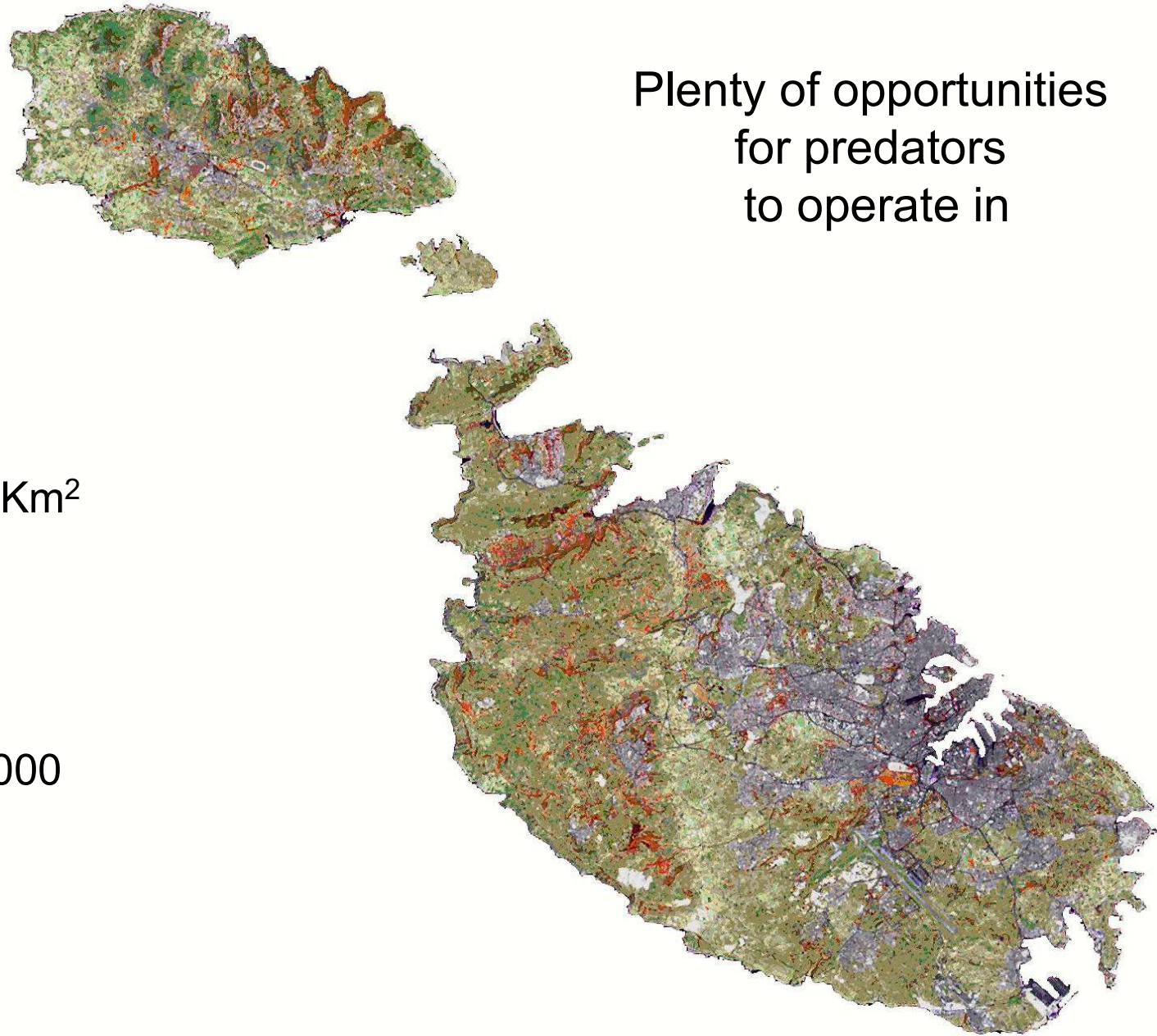
(Census, 2005)

Vacant Dwellings: 53,000

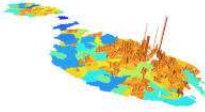
(Census, 2005)

Enterprises: 50,000

(NSO, 2008)



Plenty of opportunities
for predators
to operate in

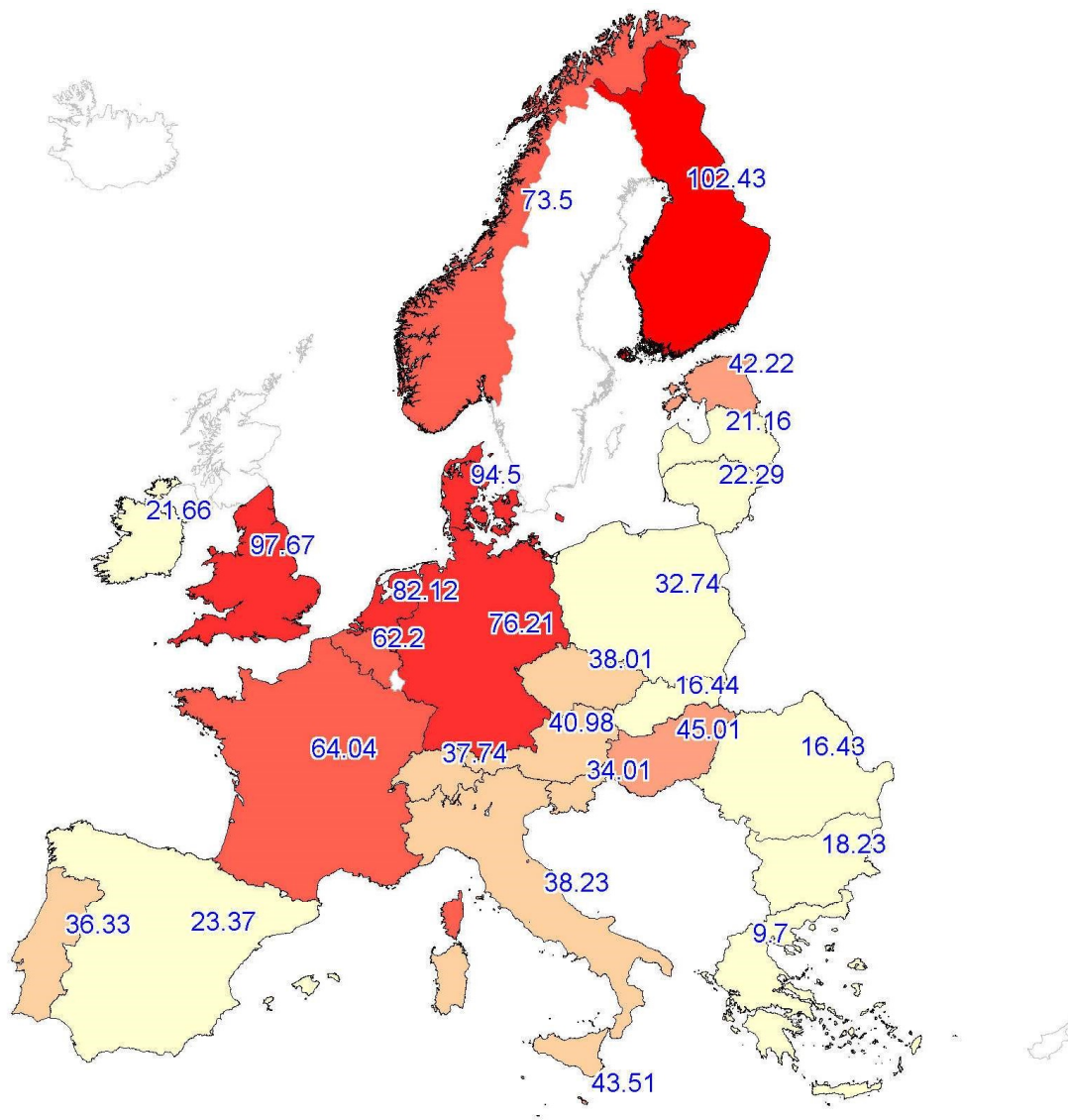


Malta Crime

Comparison with Europe and Small Island States

Europe Crime 2000

Grand total of recorded crimes



Source: United Nations, (2000) Seventh United Nations Survey of Crime Trends and Operations of Criminal Justice Systems;

NSO, Abstracts of Statistics, 1949-2000

Note: Austria and Belgium Data is of 1996

Source: Horst Entorf and Hannes Spengler, European Regional Crime Database, Darmstadt University of Technology, March 2004

Date: 1st May 2006
Saviour Formosa

Malta vs Europe/Islands Levels: a Comparative Approach

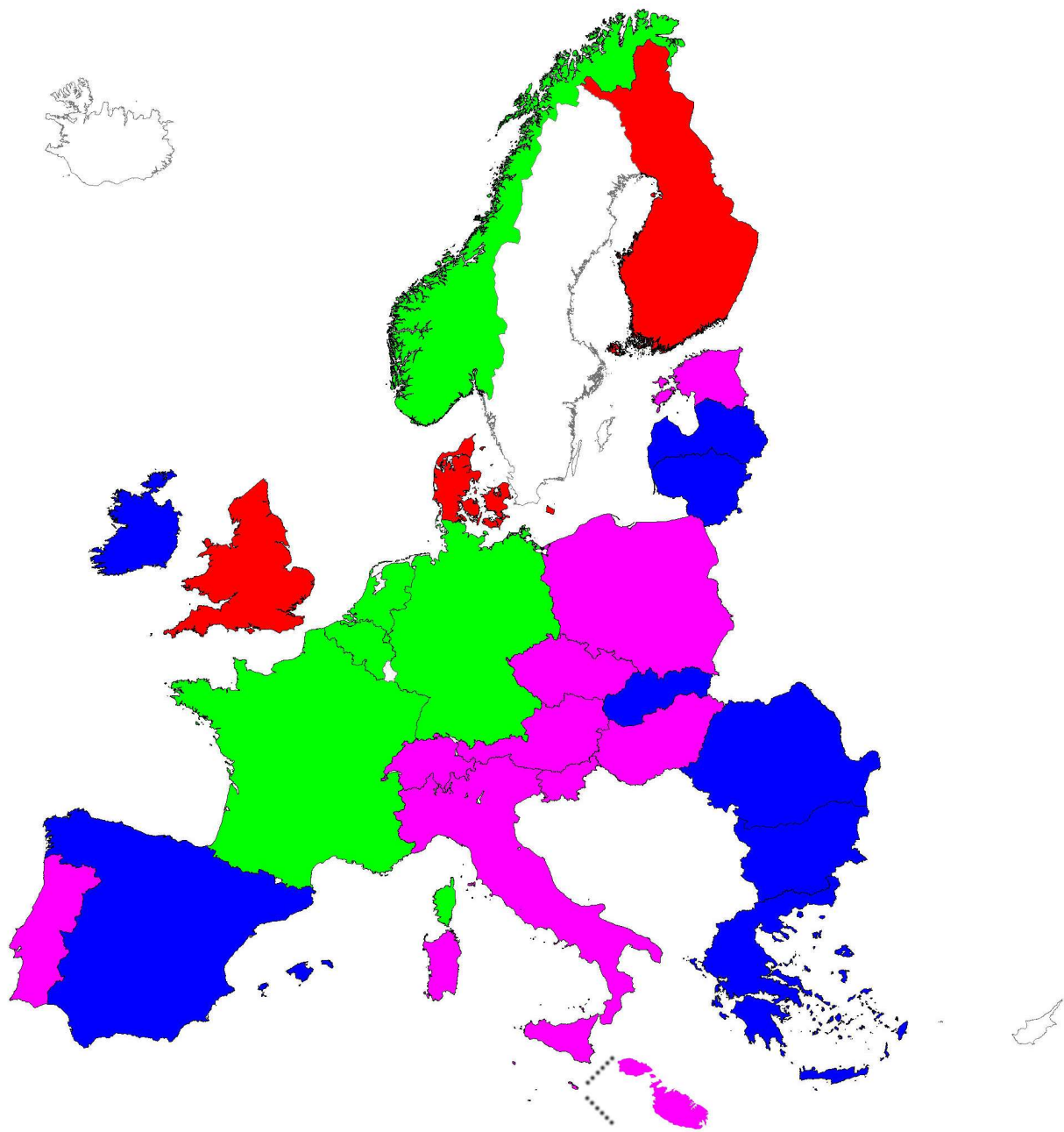


Comparative Macro-Micro Analysis Table: 2000

Measure	Grand Total		Thefts		Robberies		Rapes		Intentional Homicide		Attempted Homicide	
	Europe	Islands	Europe	Islands	Europe	Islands	Europe	Islands	Europe	Islands	Europe	Islands
Mean	45.797	39.344	19.795	10.638	1.256	0.864	0.080	0.253	0.029	0.070	0.021	0.137
Max	102.430	107.630	45.800	31.220	12.590	1.600	0.260	0.790	0.100	0.340	0.090	0.390
Min	9.700	11.860	2.360	1.880	0.080	0.120	0.010	0.020	0.010	0.010	0.010	0.010
Malta	43.510	43.510	16.490	16.490	1.380	1.380	0.030	0.030	0.010	0.010	0.010	0.010
Malta's Mean position	Lower then Mean	Higher then Mean	Lower then Mean	Higher then Mean	Higher then Mean	Higher then Mean	Lower then Mean	Lower then Mean	Lower then Mean	Lower then Mean	Lower then Mean	Lower then Mean

Measure	Frauds		Burglaries		Bribery Crimes		Automobile Theft		Drug Offenses		Assaults	
	Europe	Islands	Europe	Islands	Europe	Islands	Europe	Islands	Europe	Islands	Europe	Islands
Mean	1.857	0.719	7.696	5.211	0.061	0.112	2.523	0.907	1.565	2.554	2.322	4.051
Max	10.900	1.620	18.660	17.770	0.520	0.490	6.400	2.690	9.870	5.460	8.520	9.090
Min	0.040	0.360	0.600	0.250	0.010	0.010	0.200	0.100	0.020	0.140	0.310	0.130
Malta	0.520	0.520	6.200	6.200	0.010	0.010	2.690	2.690	0.140	0.140	2.630	2.630
Malta's Mean position	Lower then Mean	Lower then Mean	Lower then Mean	Higher then Mean	Lower then Mean	Lower then Mean	Higher then Mean	Higher then Mean	Lower then Mean	Lower then Mean	Higher then Mean	Lower then Mean

European Grand Total Crimes Cluster Map



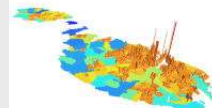
In my time the lawless frontier was along the edge of the wilderness
Today, the crime frontier is in the shadow of the skyscraper
Emmett Dalton – 1930 train robber



CRISOLA

Model

a serious case of
crime, social and landuse
interactivity



What does it stand for?
Chicago to UK to Malta

The Concentric Zone Model:

1. Central Business District

2. Transitional Zone

***Recent Immigrant Groups*

—Deteriorated Housing

—Factories

—Abandoned Buildings

3. Working Class Zone

—Single Family Tenements

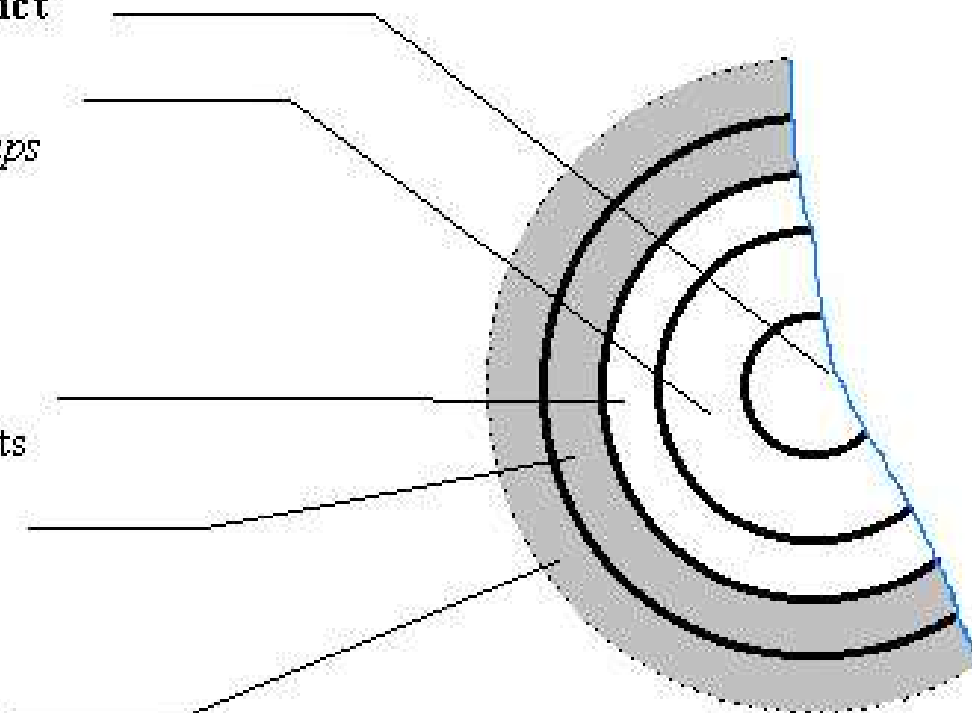
4. Residential Zone

—Single Family Homes

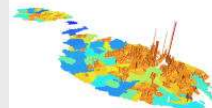
—Yards/Garages

5. Commuter Zone

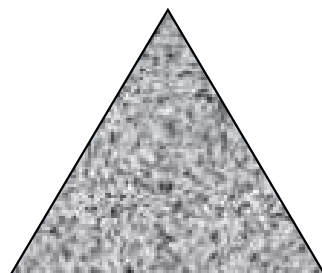
—Suburbs



All terrorists, at the invitation of the Government, end up with drinks at the Dorchester
Hugh Gaitskell



CRIME



SOCIAL



LANDUSE

Theories

Opportunity Theory
Routine Activity Theory
Broken Windows Theory
Structuration Theory

**Save the leftover cakes. They will come in handy for the funeral
*Mary Wilson who murdered three husbands and a lover***

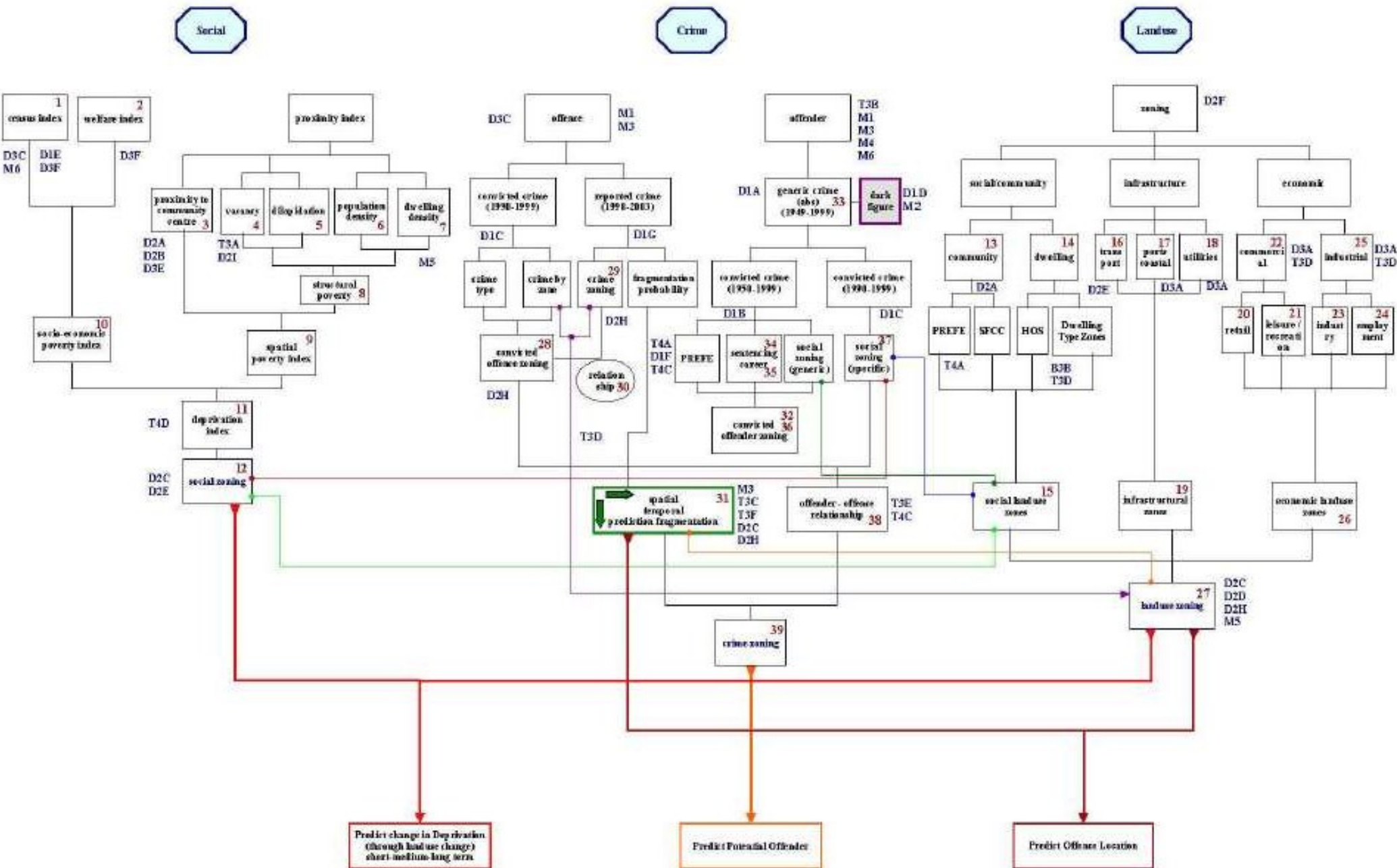
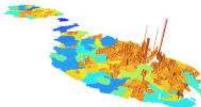
Phase 1 - Conceptual Model Logical Matrix



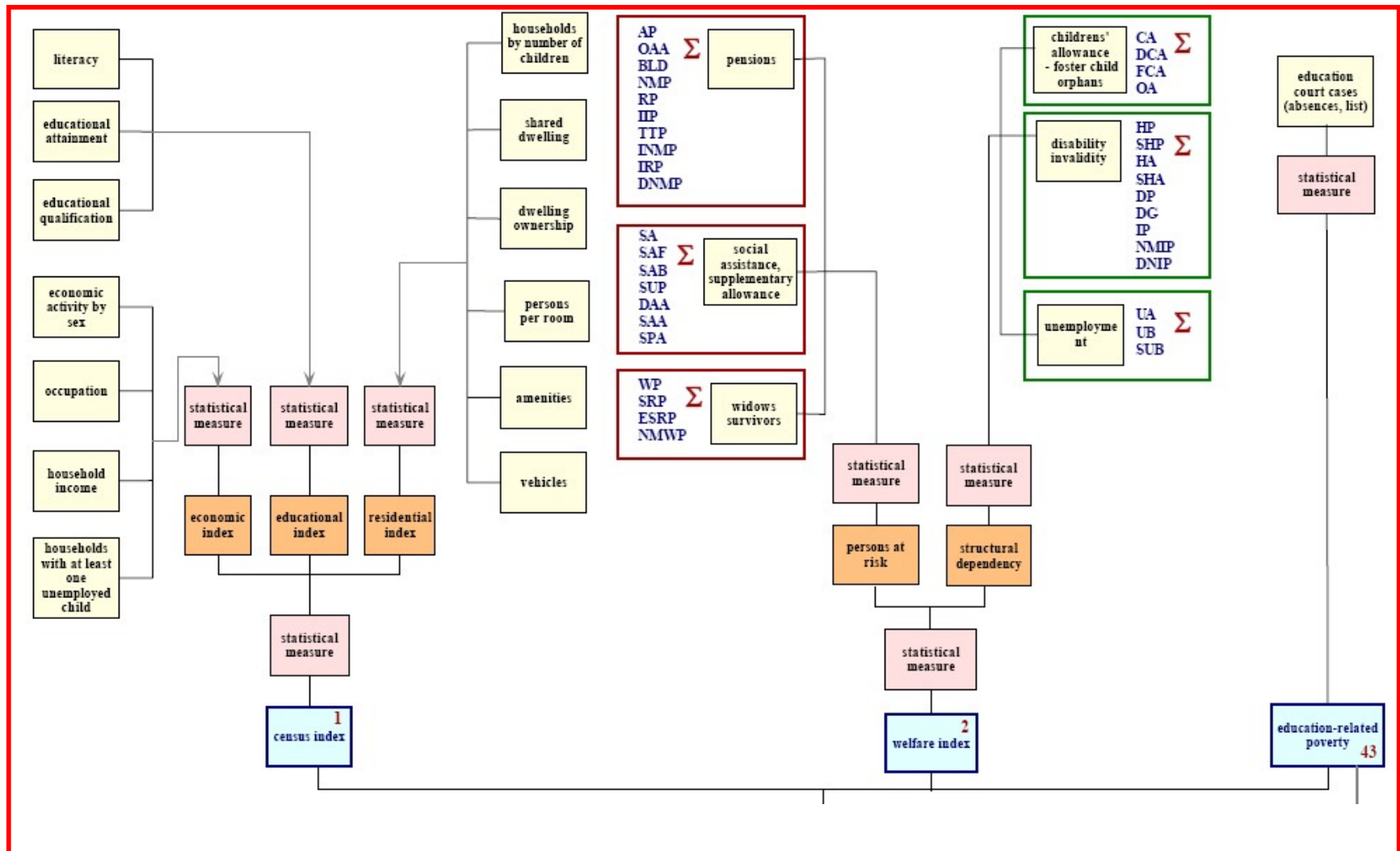
Social	Crime	Urban
Analysis of the Social structure of the area under study	Analysis of crime in the area under study through offences and the behaviour of offenders	Analysis of spatial constructs through a study of landuse zoning, spatial aggregates and physical structures
↓	↓	↓
Focuses on socio-economic and socio-cultural parameters towards an understanding of poverty and deprivation as a surrogate for social and community health	Focuses on offences as a measure of attractiveness of an area and focuses on offender data as a measure of social disorganization	Focuses on landuse zoning as a measure of affluence, leading to an understanding of opportunity structures
↓	↓	↓
Identifies the social-spatial constitution of the areas, leading to a social-zoning structure	Identifies the criminal-spatial constitution of the areas leading to a crime-zoning structure	Identifies the physical constitution of the areas leading to a landuse-zoning structure
↓	↓	↓
Impact on social capital – social cohesion	Impact on security and safety	Impact on spatial capital
↓	↓	↓
Social change	Crime change	Landuse change

Beasts kill for hunger. Man for pay
John Gay

Phase 2 – Identifying the linkages

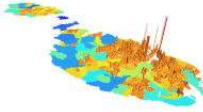


Phase 3 – Identifying the datasets and attributes



If you want to know who your friends are, get yourself a jail sentence

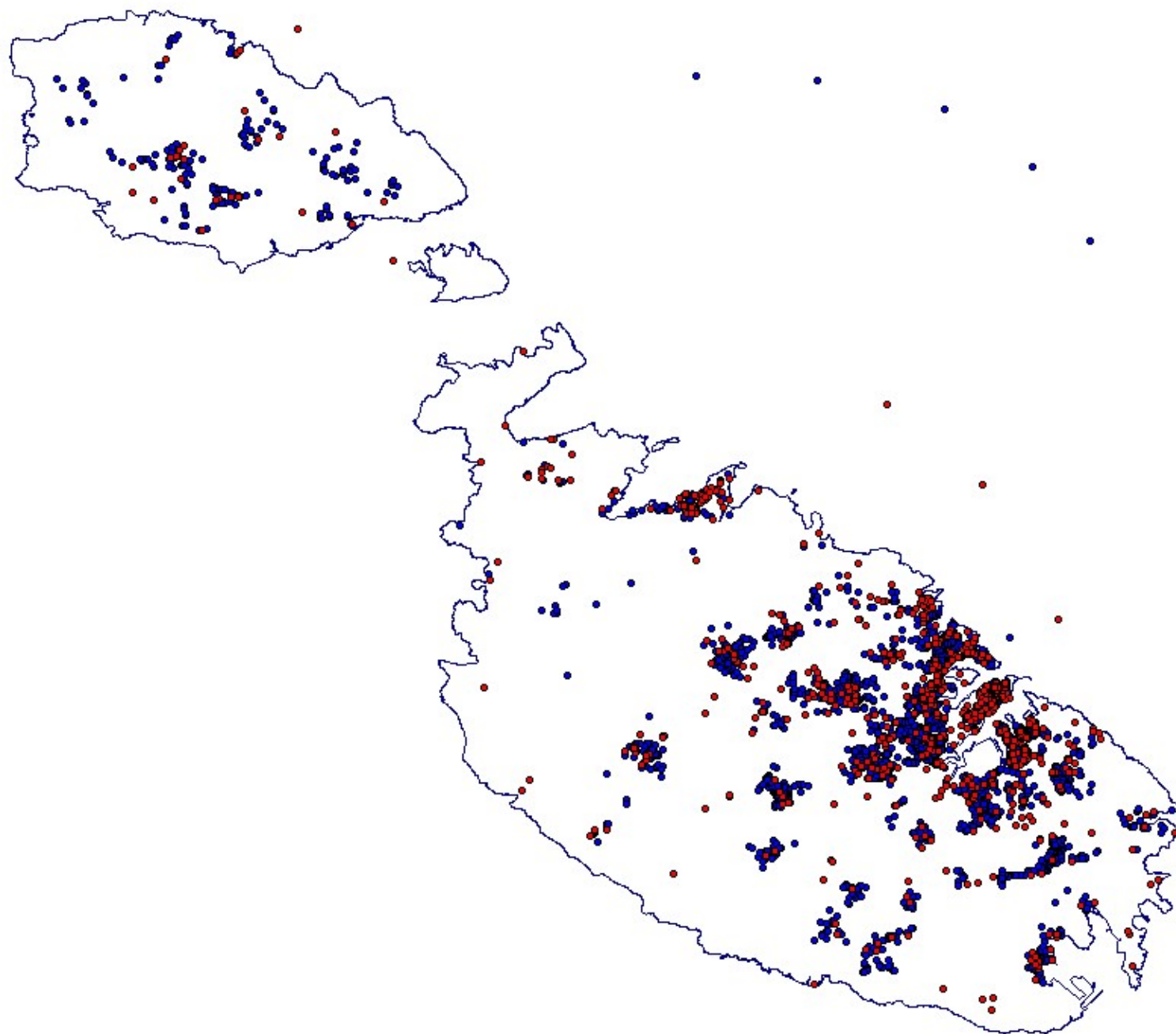
Charles Bukowski



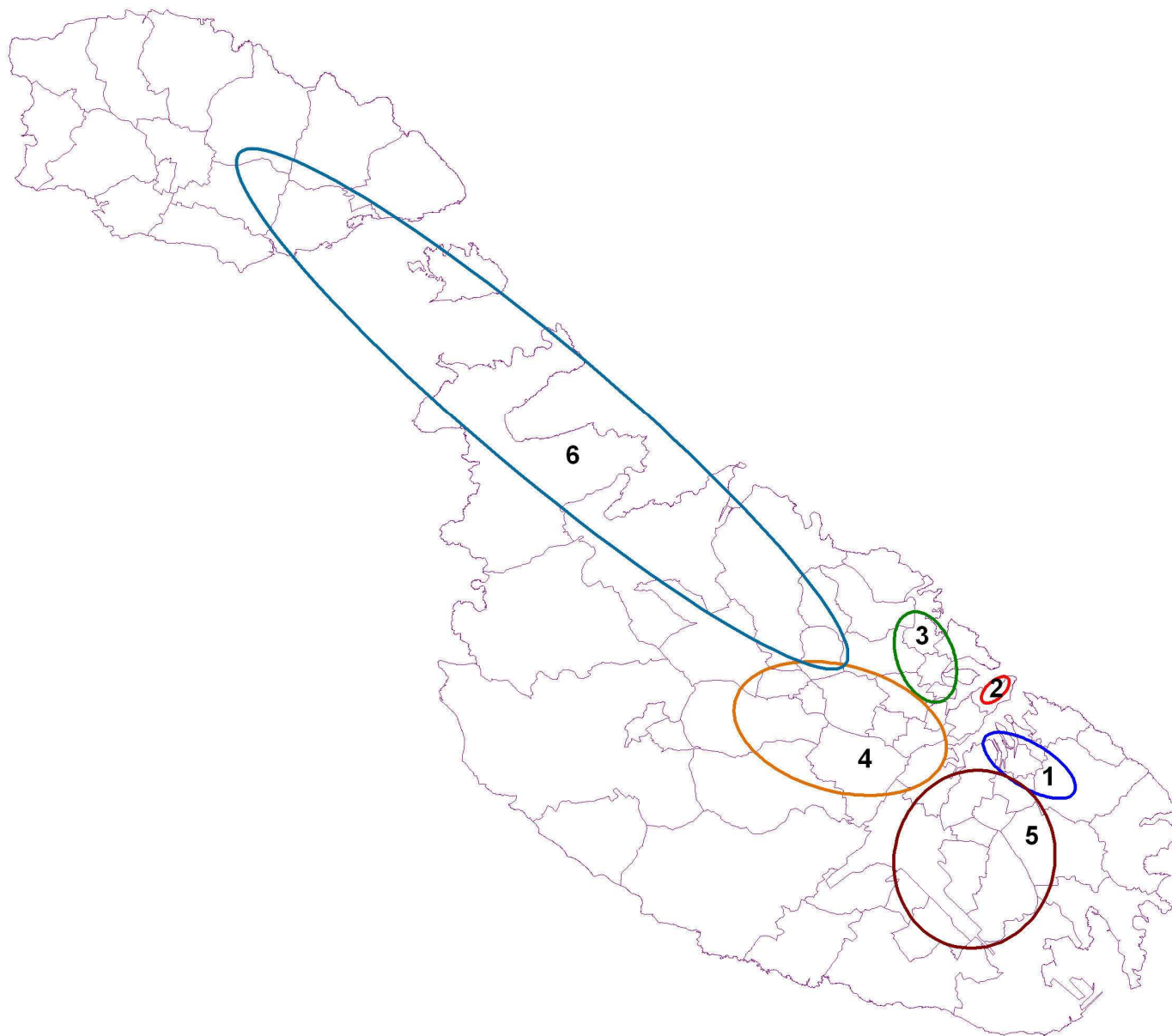
50 years offenders 10 years offence

An Incarcerated Experience

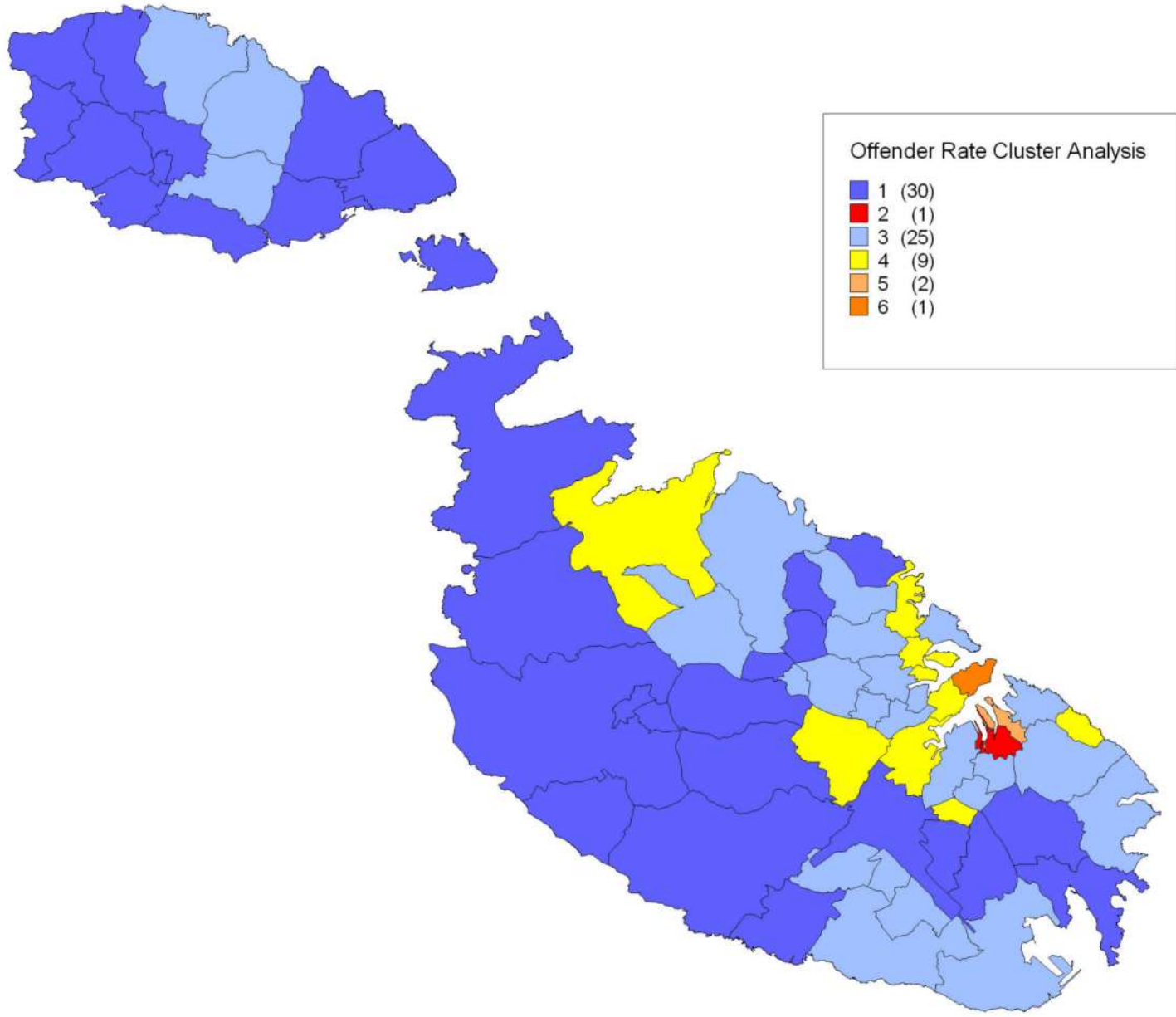
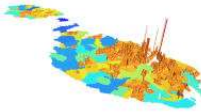
Offender basedata in 1990s



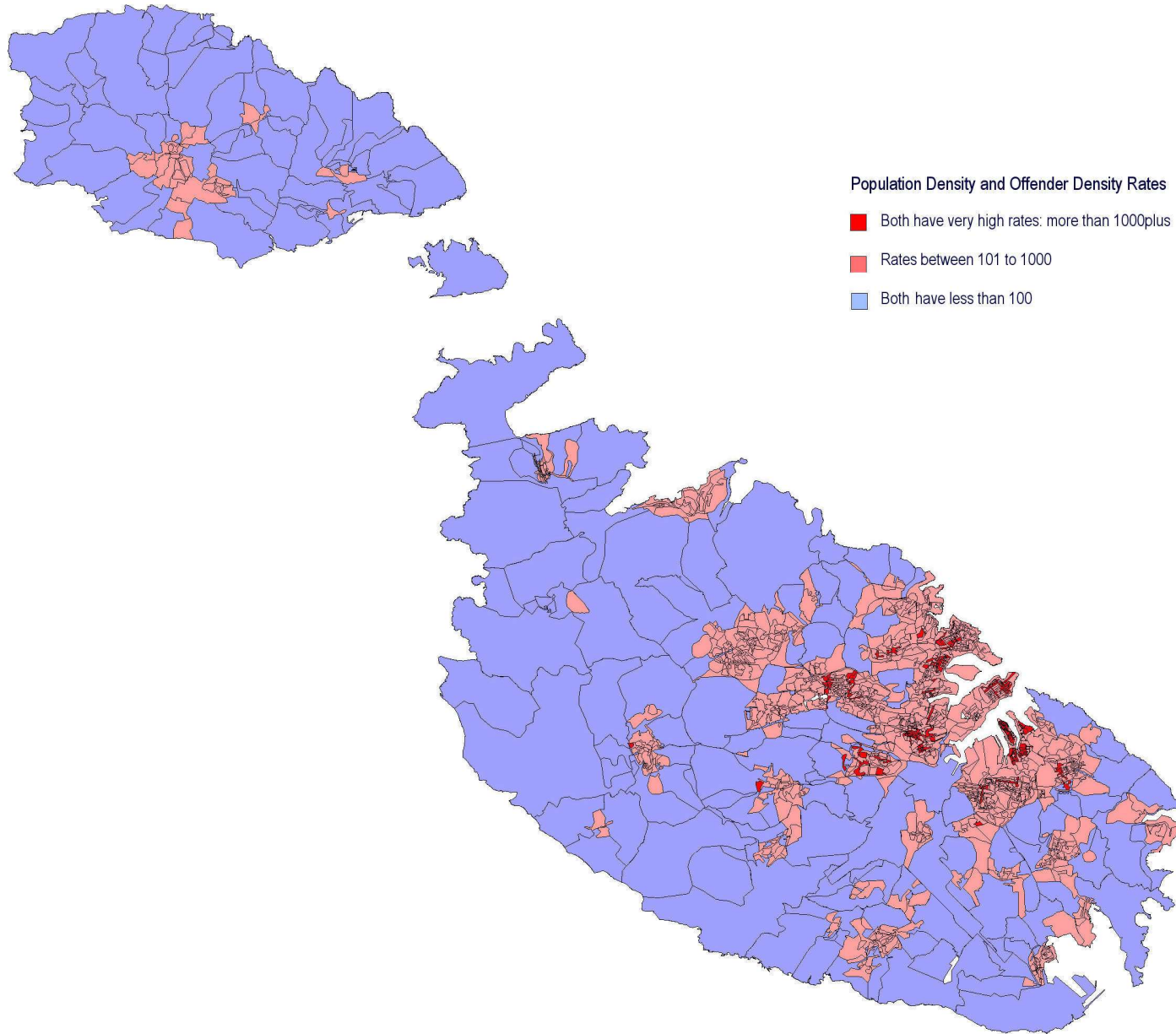
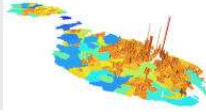
Offender clusters in 1990s



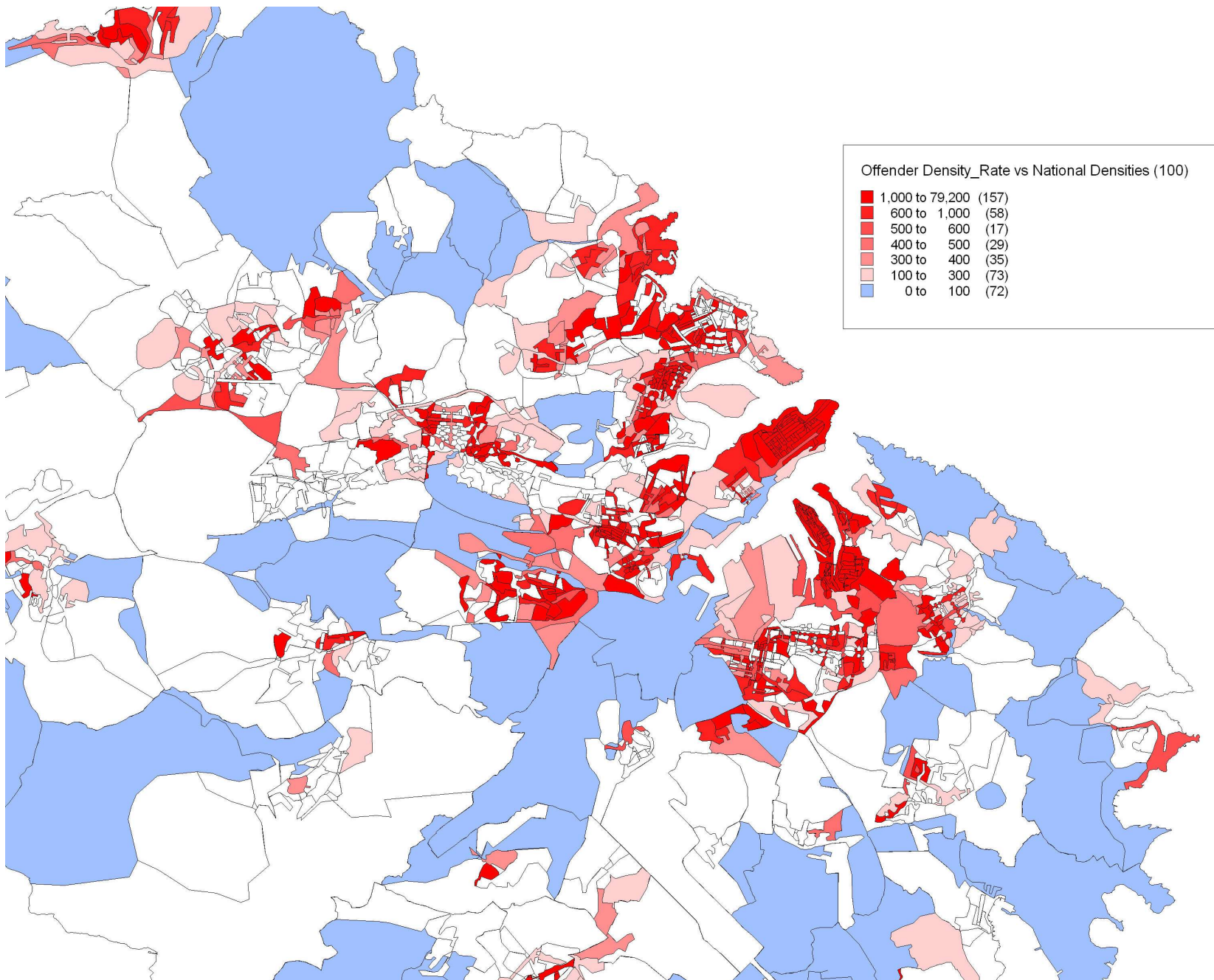
Offender Cluster Analysis



Offender densities by EAs: popdens-offender correlation



Offender densities vs National densities: EAs



Offender/poverty hotspots

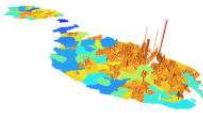
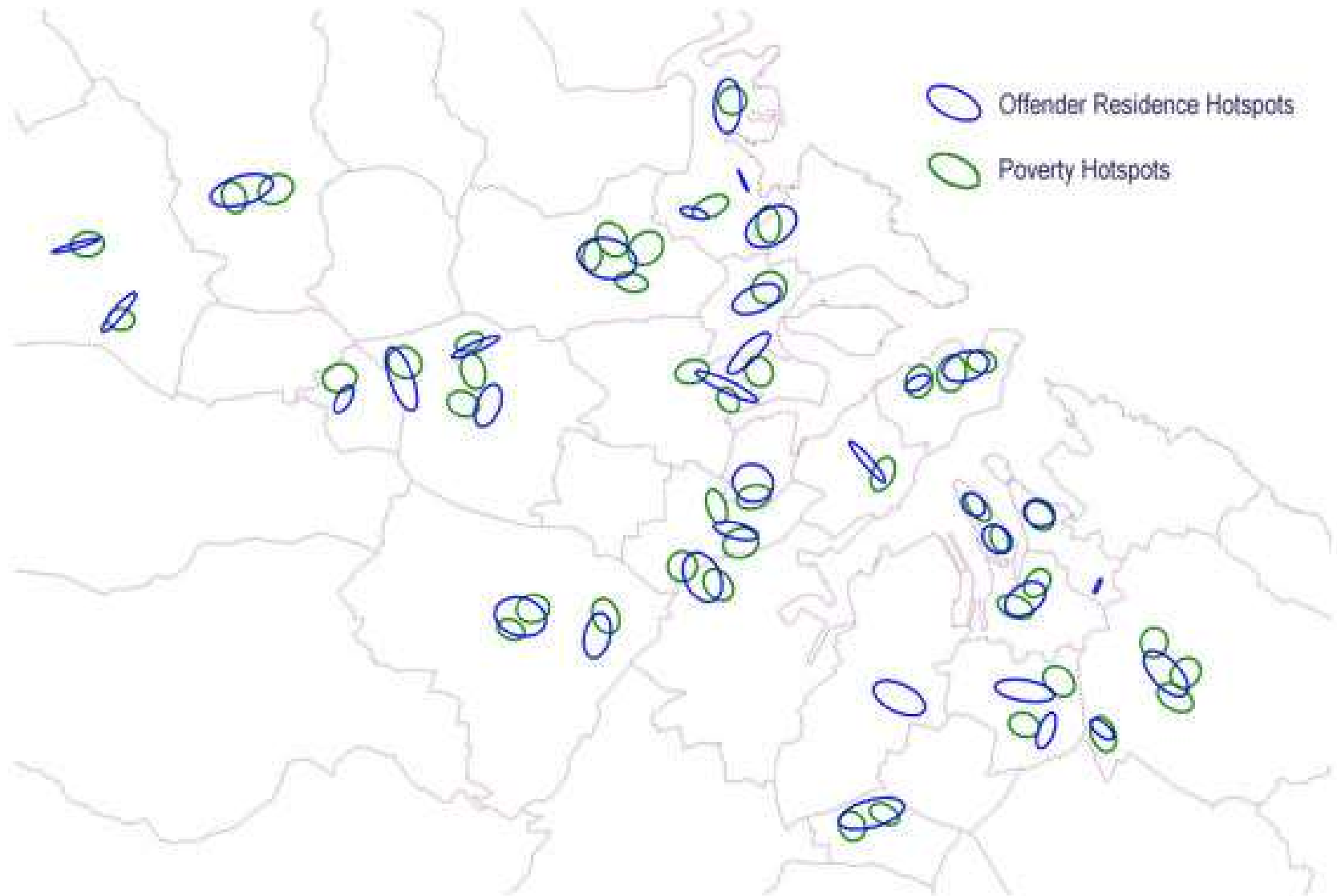


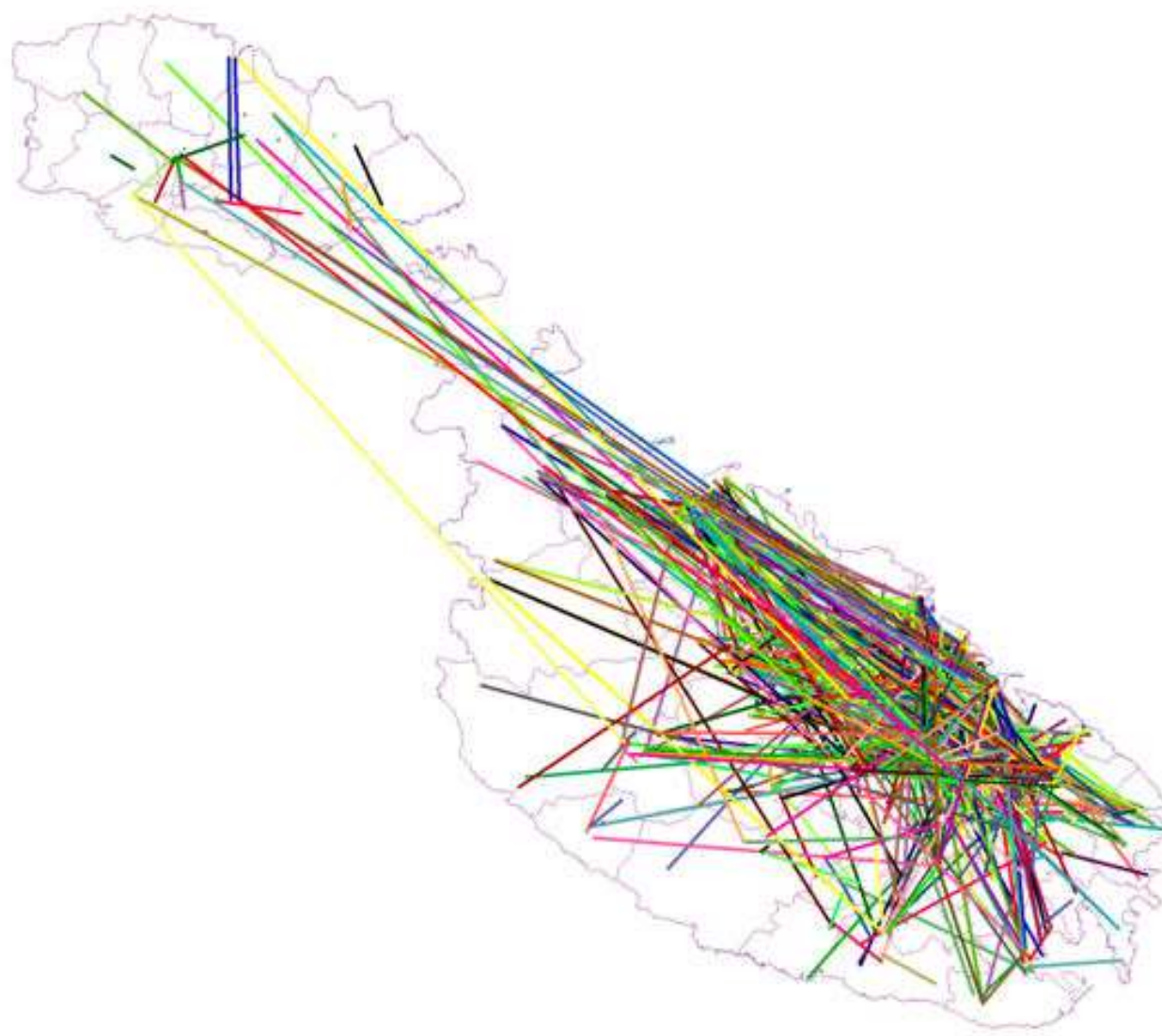
Figure 8.39: 1NNH hotspot analysis for offender residence and poverty



Offender journey to crime – 1990s



Figure 8.49: The Maltese Islands Journey-to-Crime Web



Offender journey to crime – 1990s – Birgu turf map

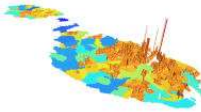
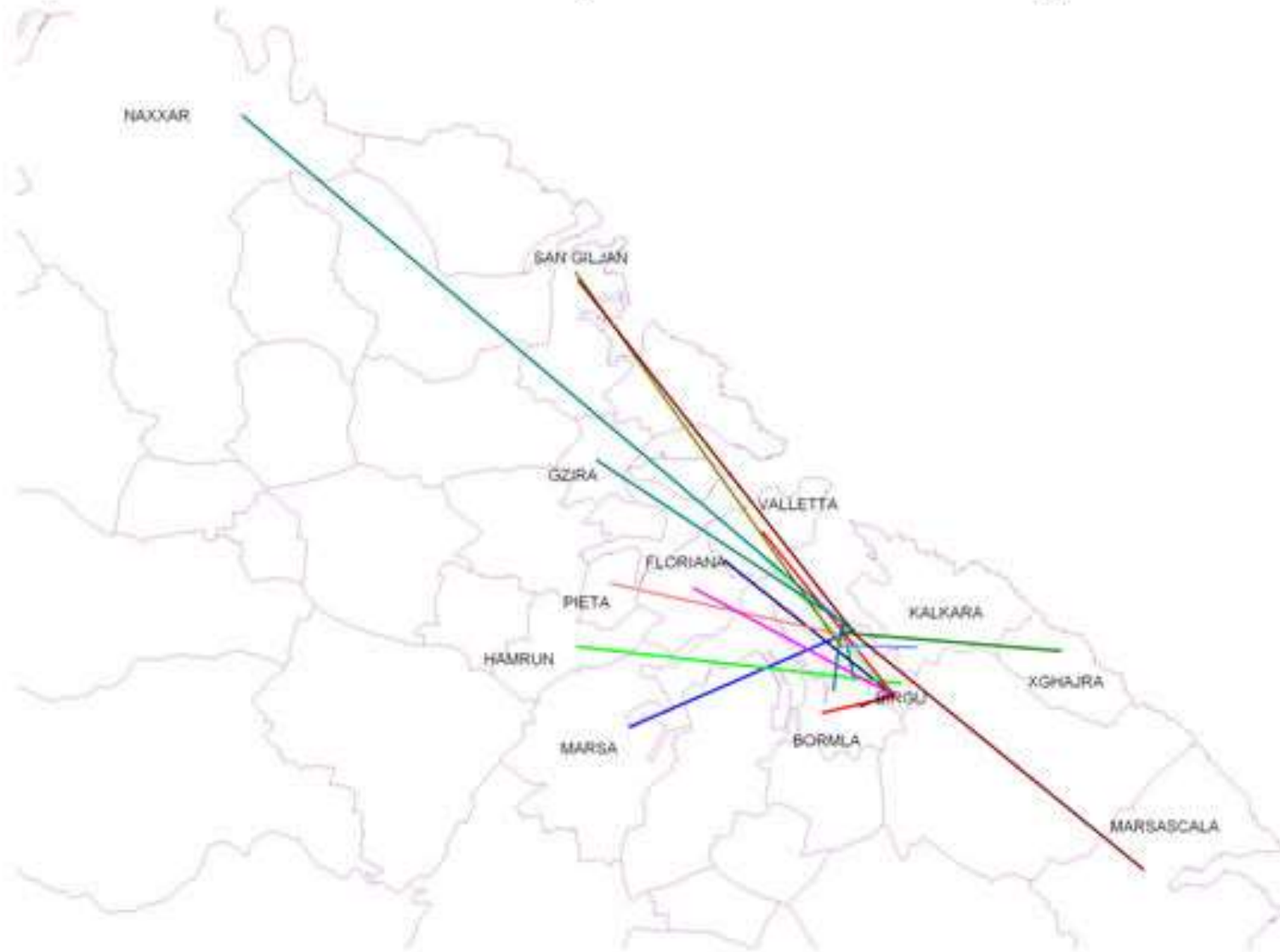


Figure 8.50: The Maltese Islands Journey-to-Crime Web: the case for Birgu



Offender journey: a spatio-statistical approach

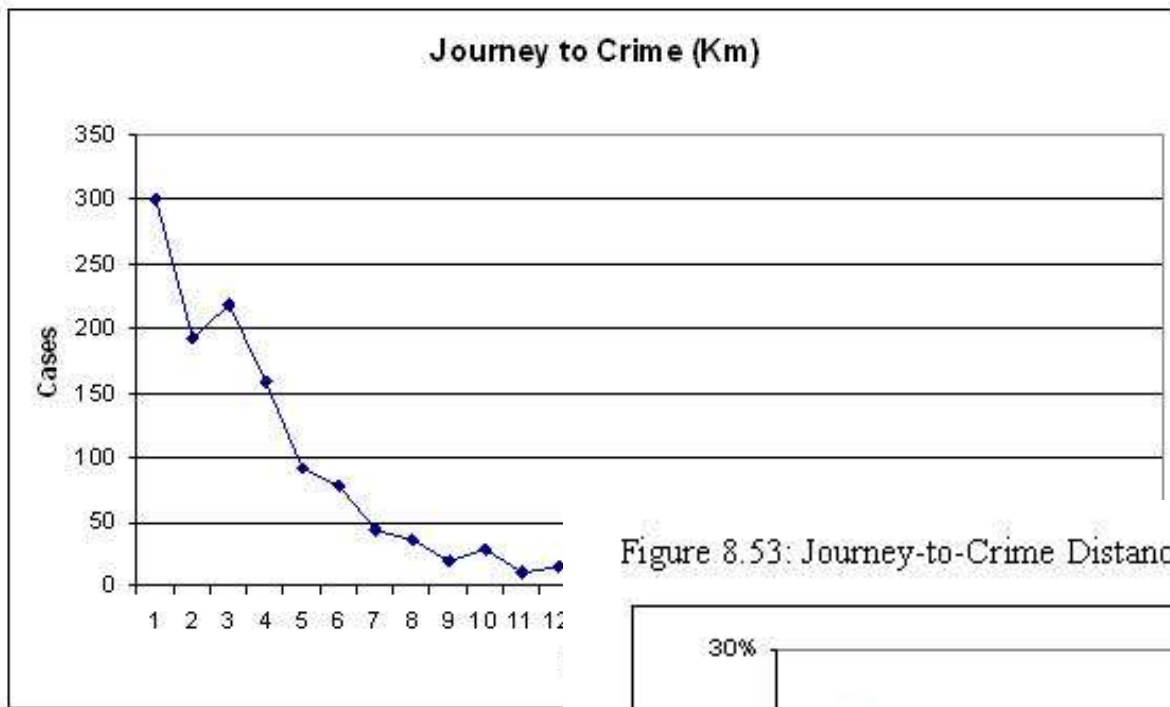
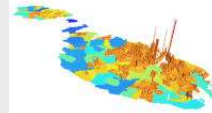
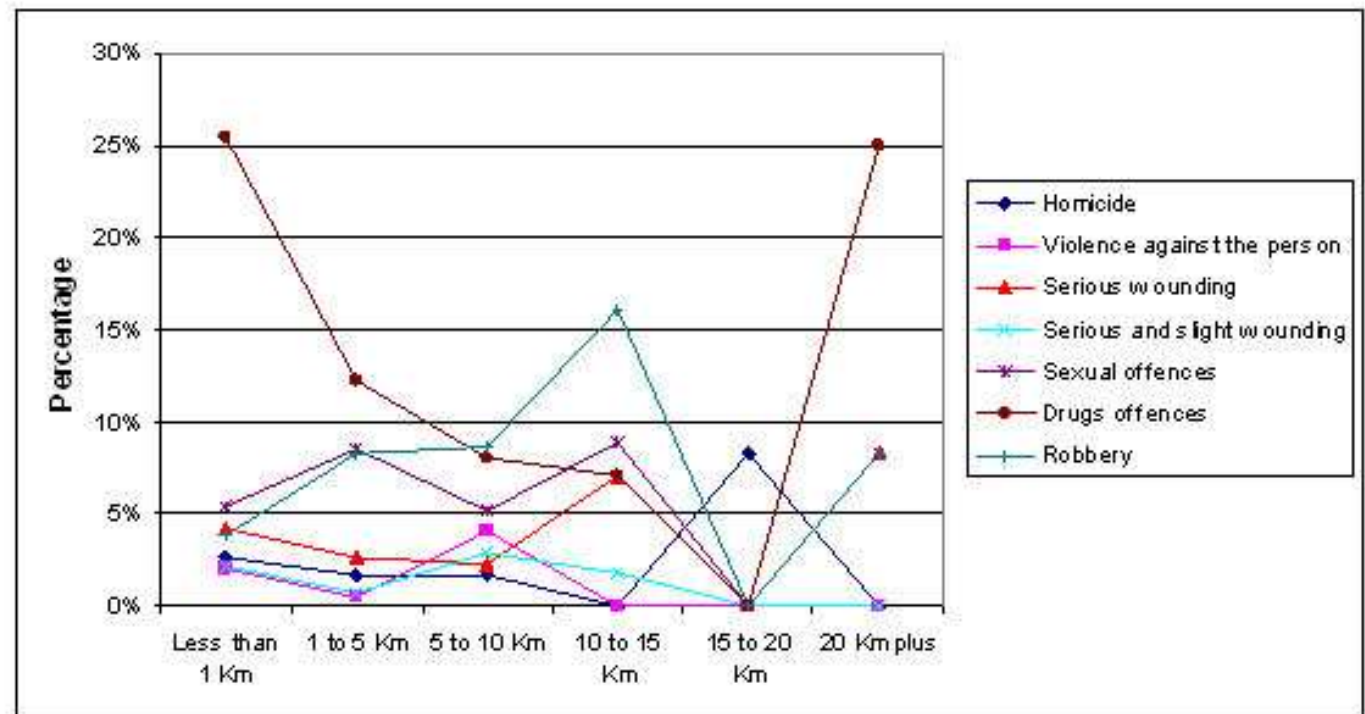
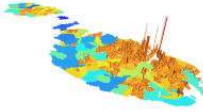


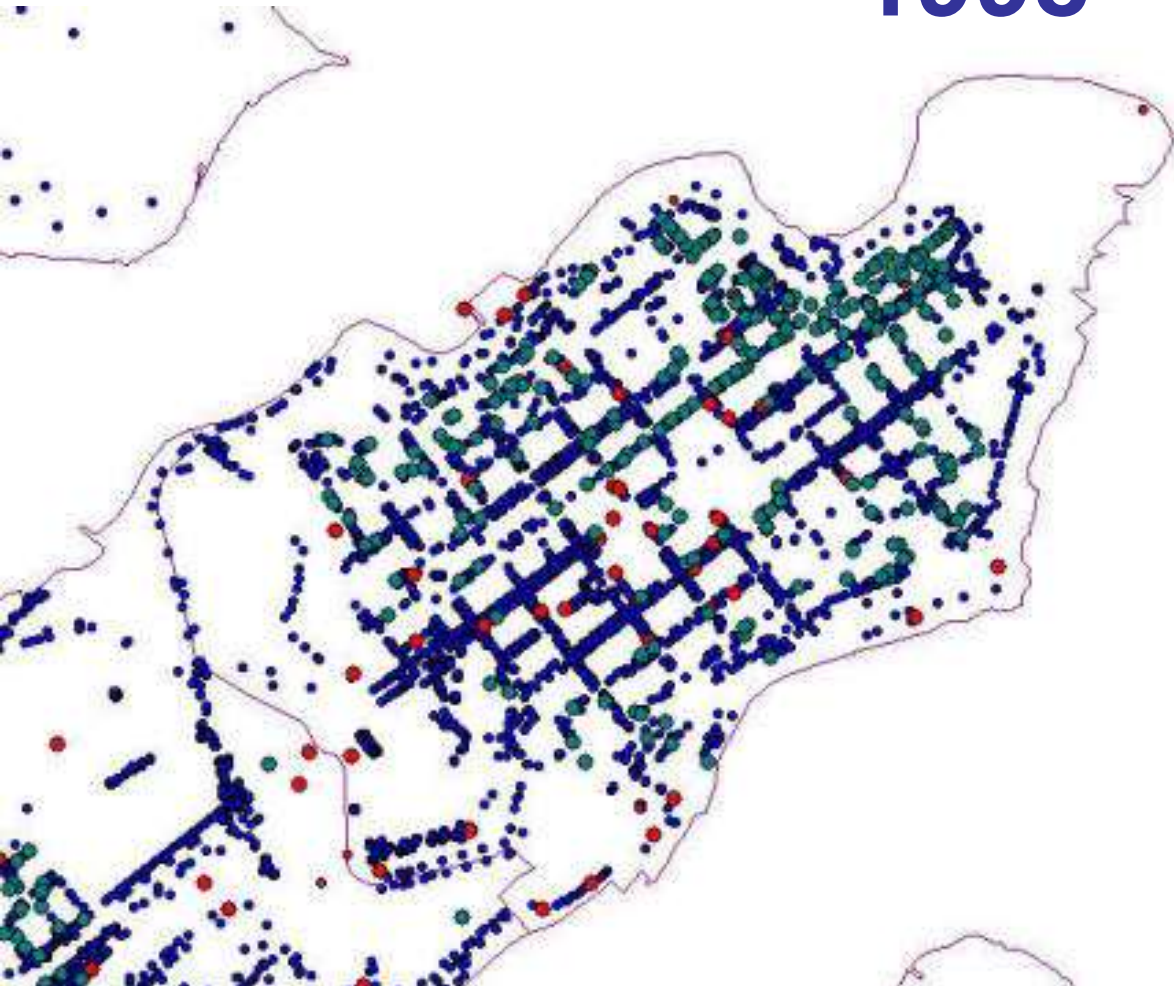
Figure 8.53: Journey-to-Crime Distance – Serious offences



The golden rule is that there are no golden rules
George Bernard Shaw



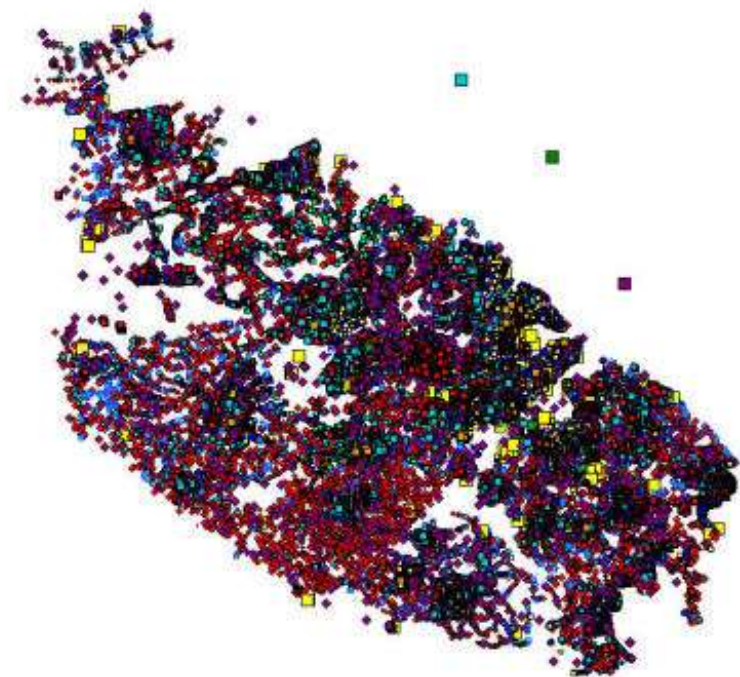
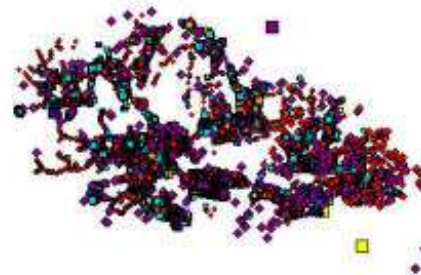
11 years of reported offences 1998 - 2008



Offence analysis: pin in to a wall? Or easy digital process?



Year	Crimes
1998	15,771
1999	16,046
2000	17,030
2001	15,912
2002	17,043
2003	17,773
2004	18,388
2005	18,579
2006	16,538
2007	15,150
2008 (Jan-Oct)	11,725
Grand Total	179,955

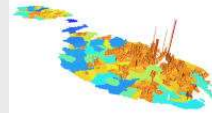


Error Generation

Manual imposition

Dark Figure

Society was different, crime was different, villains were different
Villains gave themselves up, villains pleaded guilty
Nipper Read, 1950s arrest of the Krays

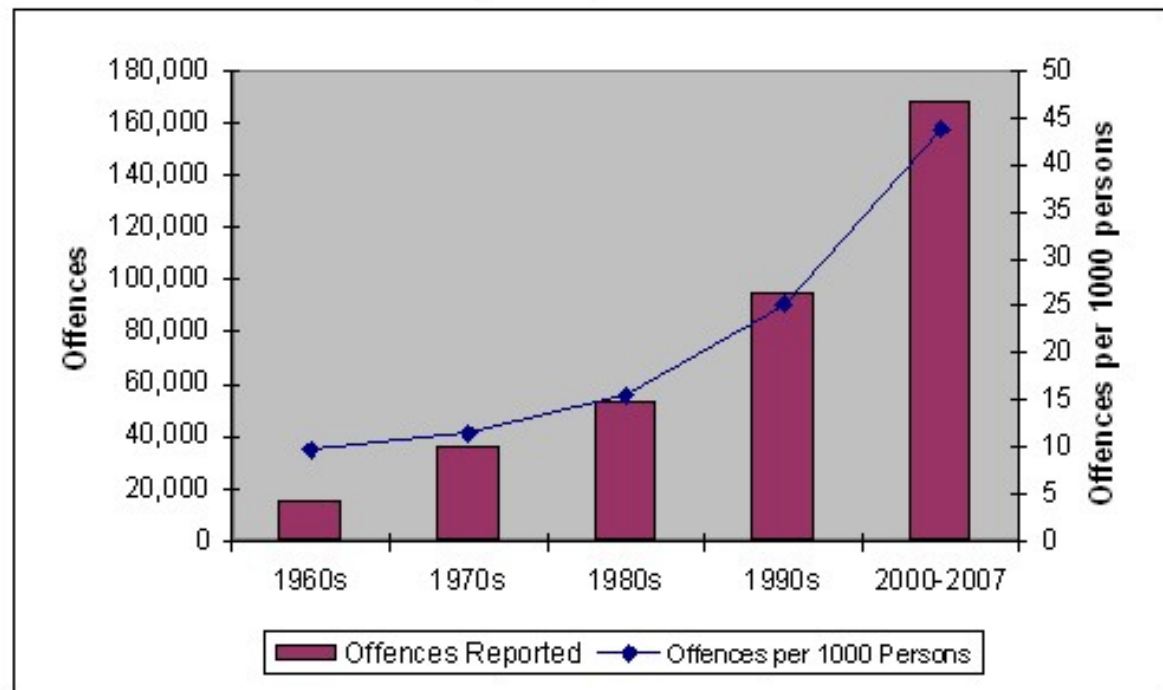


Offence Incidences: a historical approach

Offences and Offences per 1000 persons: 1997 - 2007

Period	Offences Reported	Offences per 1000 Persons
1960s	14,881	9.7
1970s	36,372	11.5
1980s	53,465	15.5
1990s	95,180	25.2
2000-2007	168,230	

Offences and Offences per 1000 persons: 1997 - 2007



Offence Incidences: the 10 most recent years - Type



CRIMES FROM 1998 TO 2007 BY CATEGORY BY YEAR

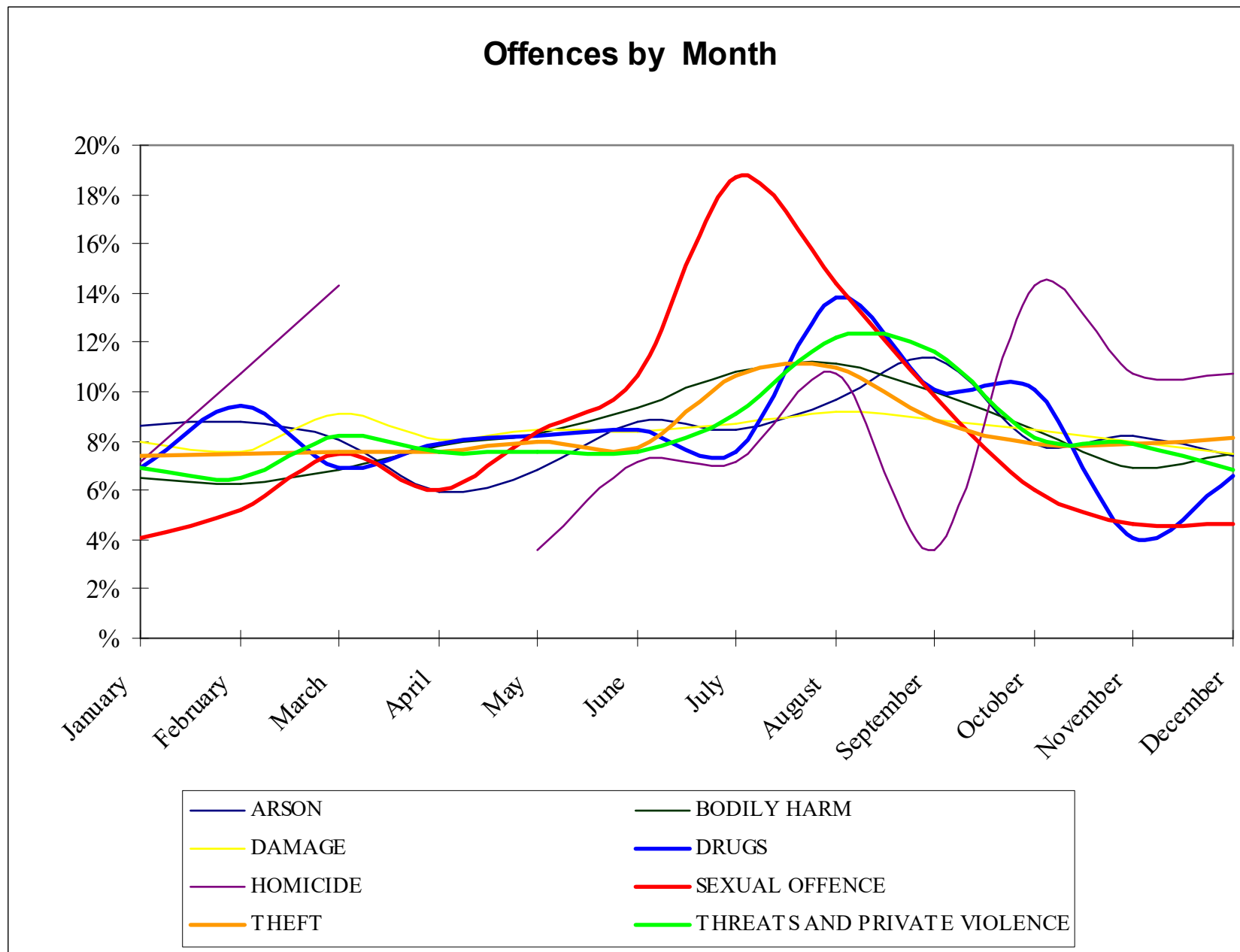
CRIME_CATEGORIES	YEAR										Grand Total
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
THEFT	8115	9187	10472	9824	10518	1102	11465	11398	10103	9045	101151
DAMAGE	4634	4237	3706	3419	3460	3576	3657	3687	2916	2988	36280
ATTEMPTED OFFENCES	1326	908	1108	1029	1309	1349	1259	1377	1281	830	11776
BODILY HARM	556	660	748	746	824	998	1065	1092	1108	1154	8951
THREATS AND PRIVATE VIOLENCE	465	240	184	196	158	111	104	84	61	90	1693
FRAUD	120	192	202	122	141	142	160	179	174	131	1563
IMMIGRATION	84	115	138	172	186	137	123	189	181	147	1472
ARSON	105	143	105	95	92	120	120	124	123	111	1138
VIOLENCE AGAINST PUBLIC OFFICER	122	63	96	83	111	105	111	94	136	116	1037
DRUGS	43	65	56	54	53	47	78	113	123	149	781
SEXUAL OFFENCE	54	68	56	42	53	74	61	71	94	72	645
FORGERY	17	34	43	34	34	21	91	56	116	48	494
AGAINST MORALS/HONOUR -FAMILY	67	52	40	32	41	26	36	30	19	27	370
PROSTITUTION	10	28	23	17	22	8	16	46	49	58	277
DOMESTIC VIOLENCE										116	116
COMPUTER MISUSE					2	4	11	11	29	40	97
CRIMES AGAINST THE ADMINISTRATION OF JUSTICE ETC	1	14	10	6	10	4	6	9	4	3	67
CRIMES AGAINST PUBLIC SAFETY	11	8	12	7	5	3	1	2		3	52
VIOLATION OF PLACES OF CONFINEMENT	4	4	4	3	5	6	3	9	11	2	51
CRIMES AGAINST PUBLIC PEACE	17	4	7	10	5	3	1				47
HOMICIDE	5	9	4	5	5		7	4		4	43
PERJURY & FALSE SWEARING	4	6	3	1	4	8	2	1	3	7	39
INFANTICIDE/ABANDONMENT OF CHILD		5	2	5	4	3	5	1	1	5	31
ABUSE OF PUBLIC AUTHORITY	3		5	2	1	1	3			2	17
CRIMES AGAINST RELIGIOUS SENTIMENT	2	1	1	2		3		1	4		14
ABUSES RELATING TO PRISONS		1		4			2			1	8
MALVERSATION BY PUBLIC OFFICER	2	1	4	1							8
ABORTION/SUPPLY OF POISONOUS SUBSTANCE	2			1					1		4
CONCEALMENT OF BODIES	1	1									2
TRAFFICKING OF PERSONS								1	1		2
PORNOGRAPHY										1	1
BANKRUPTCY OFFENCES			1								1
BIGAMY/ADULTERY							1				1
SAFETY OF THE GOVERNMENT	1										1
Grand Total	15771	16046	17030	15912	17043	17773	18388	18579	16538	15150	168230

Offence Incidences: the 10 most recent years - Locality

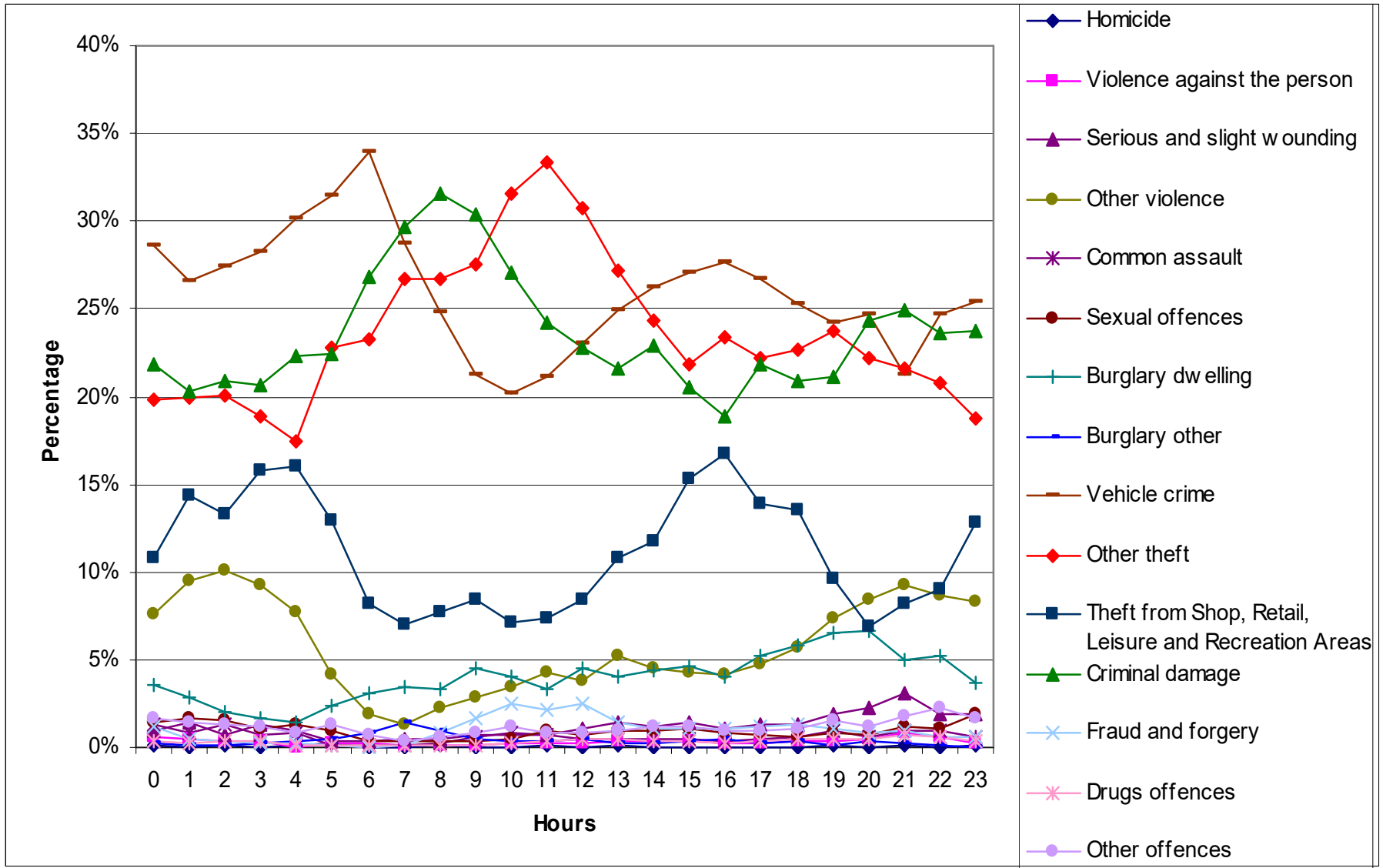
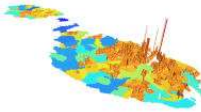


CRIMES FROM 1998 TO 2007 BY LOCALITY BY YEAR											
LOCALITY	YEAR										Grand Total
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
SAN GILJAN	1674	1812	2152	1880	1881	2088	2276	2048	2013	1969	19793
SAN PAWL IL-BAHAR	1158	1219	1261	1357	1250	1281	1285	1375	1110	1174	12470
SLIEMA	1017	1021	1128	994	1164	1231	1339	1326	1045	940	11205
VALLETTA	671	777	676	675	905	1091	1294	940	787	865	8681
BIRKIRKARA	589	669	646	629	766	613	712	688	617	440	6369
MELLIEHA	499	514	694	468	466	481	408	514	490	348	4882
HAMRUN	526	464	445	438	536	524	469	532	438	385	4757
QORMI	388	436	464	402	420	514	595	563	484	453	4719
MSIDA	417	429	448	447	512	435	474	493	508	333	4496
MOSTA	376	380	374	389	407	406	442	431	382	388	3975
PAOLA	303	343	373	331	349	417	387	434	422	414	3773
GZIRA	386	370	345	447	399	428	369	350	320	297	3711
BIRZEBBUGIA	436	312	380	252	332	375	378	406	375	332	3578
MARSASCALA	384	374	306	366	335	361	381	357	321	300	3485
MARSA	350	340	360	327	354	384	358	318	301	266	3358
PIETA	344	422	346	282	316	347	396	388	218	234	3293
RABAT (Malta)	305	222	240	222	330	279	402	510	414	318	3242
NAXXAR	270	279	331	330	320	339	324	387	362	291	3233
SAN GWANN	269	295	305	317	275	392	325	376	300	266	3120
SWIEQI	329	323	455	353	254	310	293	278	280	222	3097
ZABBAR	213	265	271	244	280	361	333	417	344	285	3013
FLORIANA	255	345	337	282	248	236	307	315	271	321	2917
GUDJA	230	232	304	333	343	350	299	234	225	224	2774
ZEBBUG (Malta)	183	204	265	231	271	239	268	327	256	234	2478
ZEJTUN	275	227	174	230	272	280	252	253	262	229	2454
ATTARD	221	211	329	255	317	312	178	189	207	190	2409
FGURA	171	226	244	257	252	270	186	250	251	271	2378
BORMLA	227	235	217	201	200	201	230	262	220	251	2244
SANTA VENERA	225	177	175	179	195	216	188	232	189	155	1931
SIG GIEWI	196	200	186	187	197	166	158	193	177	158	1818
LUQA	176	148	174	191	172	158	203	169	165	184	1740
ZURRIEQ	180	160	175	135	158	154	182	163	156	144	1607
TARXIEN	123	101	183	130	152	170	122	193	197	185	1556
RABAT (Victoria)	151	118	114	165	174	132	186	186	172	132	1530
PEMBROKE	118	129	145	138	138	140	212	165	157	153	1495
TA' XBIEX	142	158	155	135	156	126	130	154	136	118	1410
MARSAXLOKK	180	124	133	133	136	116	113	131	148	113	1327

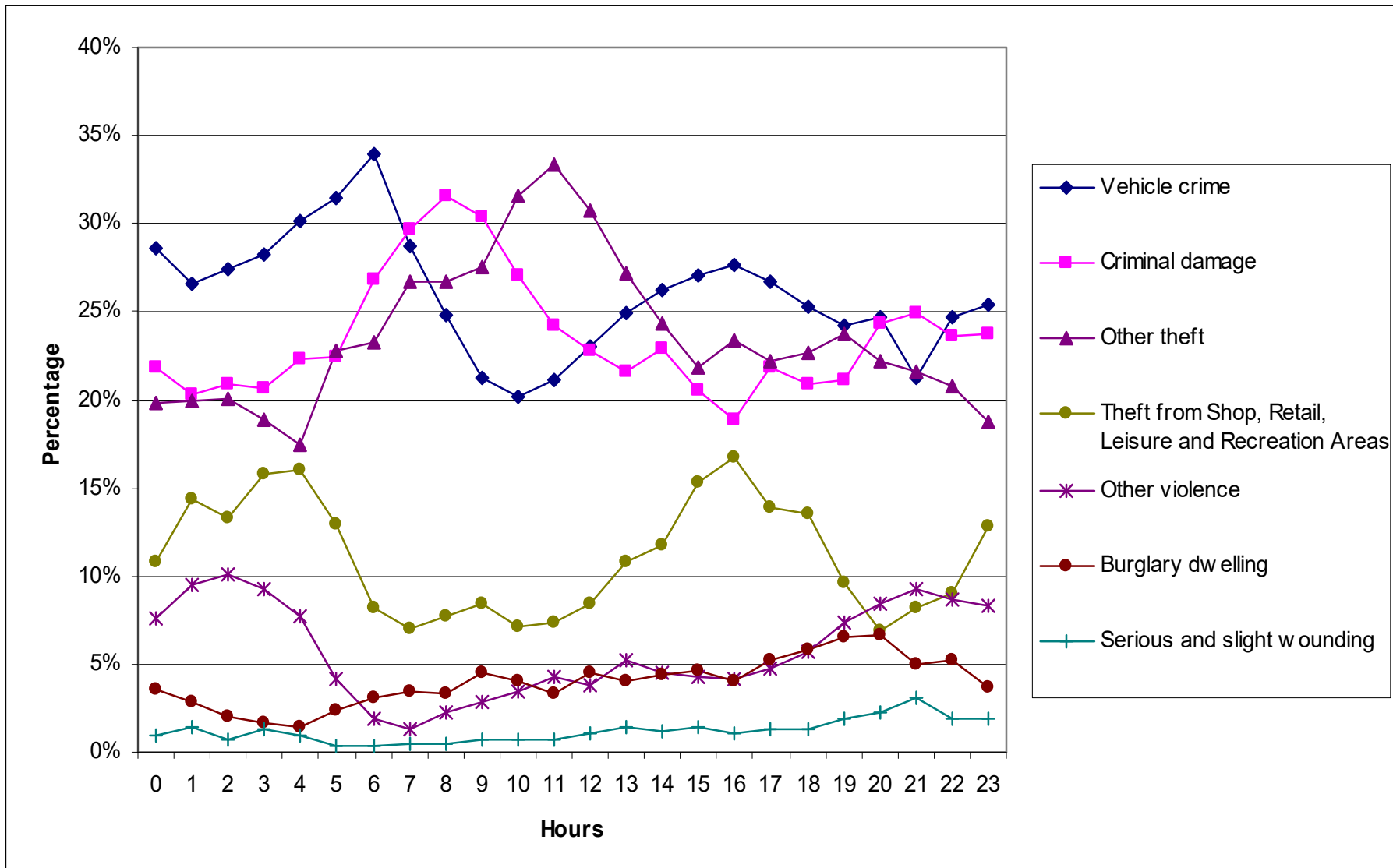
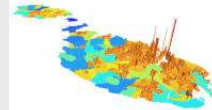
Offence Incidences: the 10 most recent years – Month



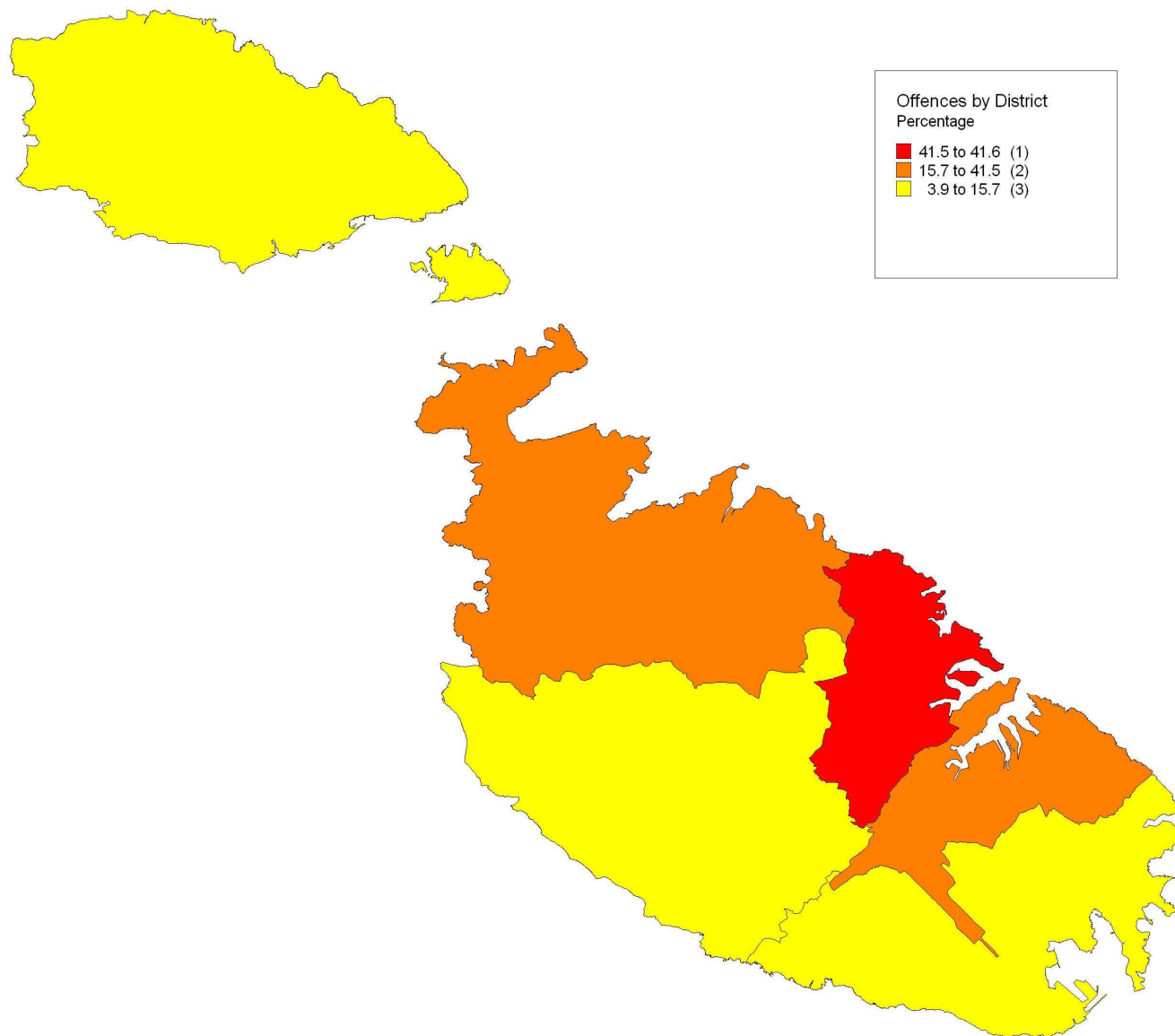
Offence Incidences: the 10 most recent years – Time - Category



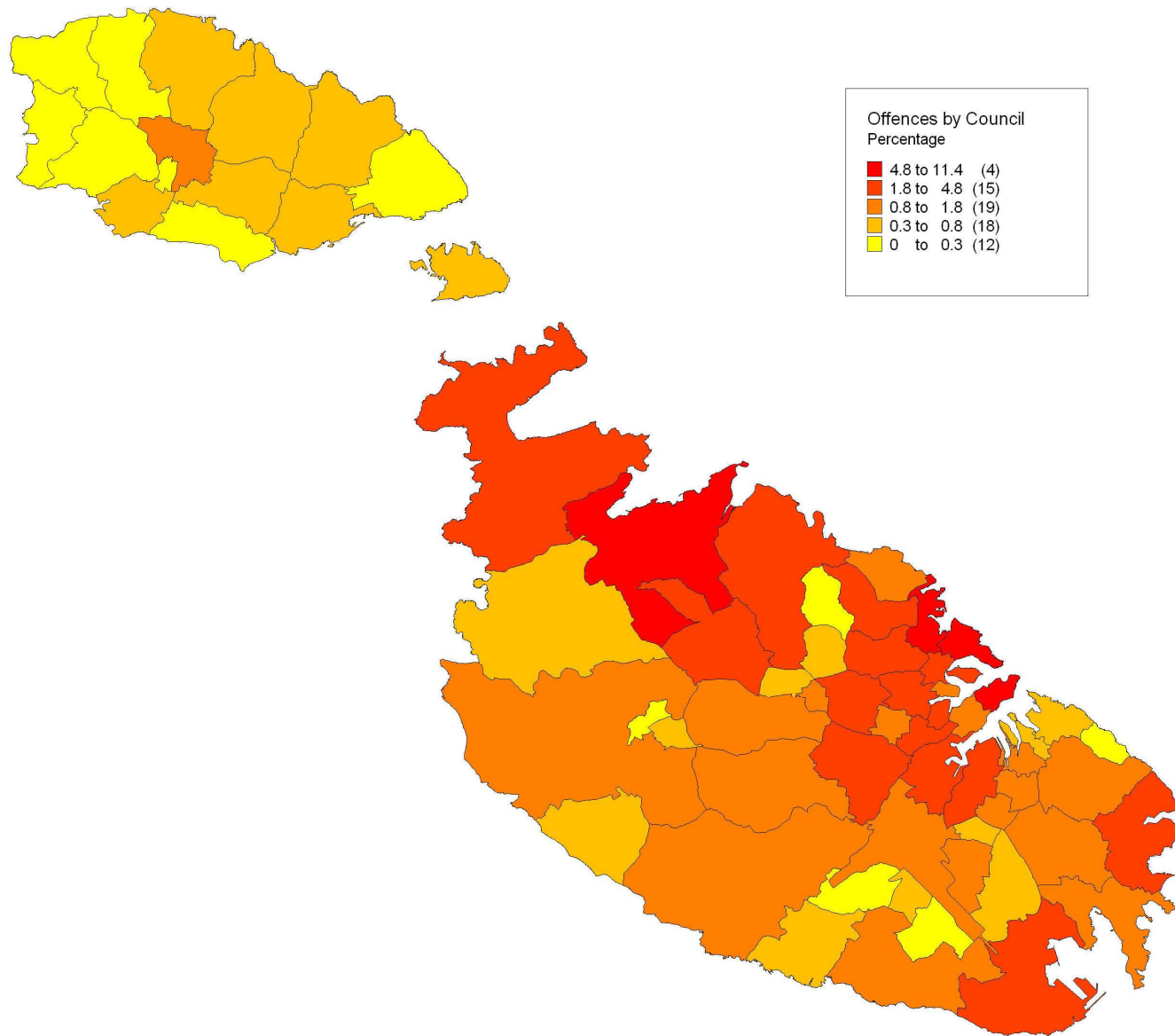
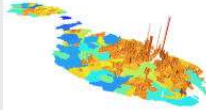
Offence Incidences: the 10 most recent years – Time - Highest



Offence Incidences: the 11 most recent years - District



Offence Incidences: the 11 most recent years - Locality



Offence Incidences: spatio-temporal - Migration

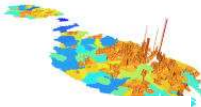


Figure 9.13a-e: 3NMH (Spatial Clustering) inter-annual change analysis 1998-2003 - at 25 points minimum per hotspot



Figure 9.13a: 1998 - 1999

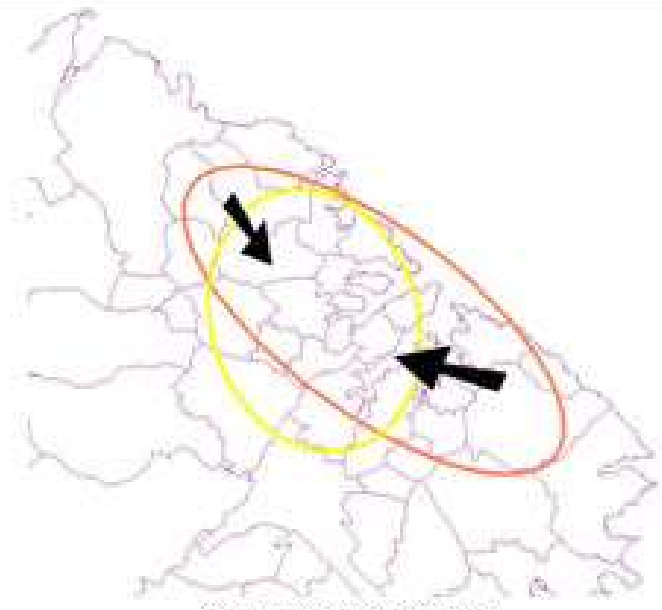


Figure 9.13b: 1999 - 2000

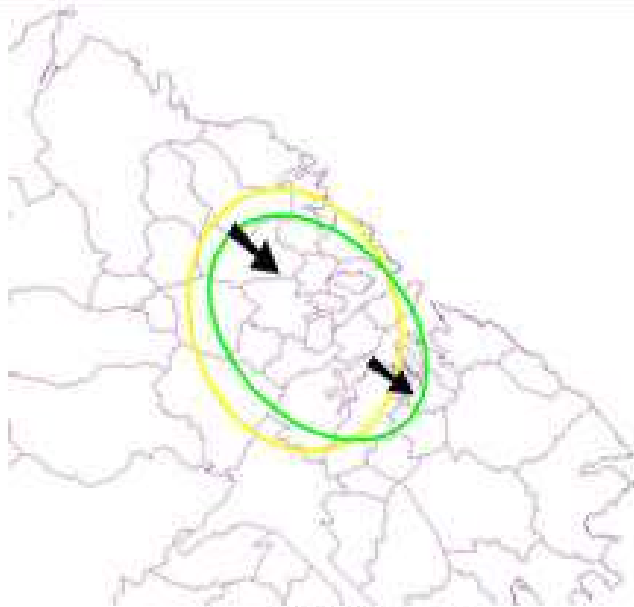


Figure 9.13c: 2000 - 2001

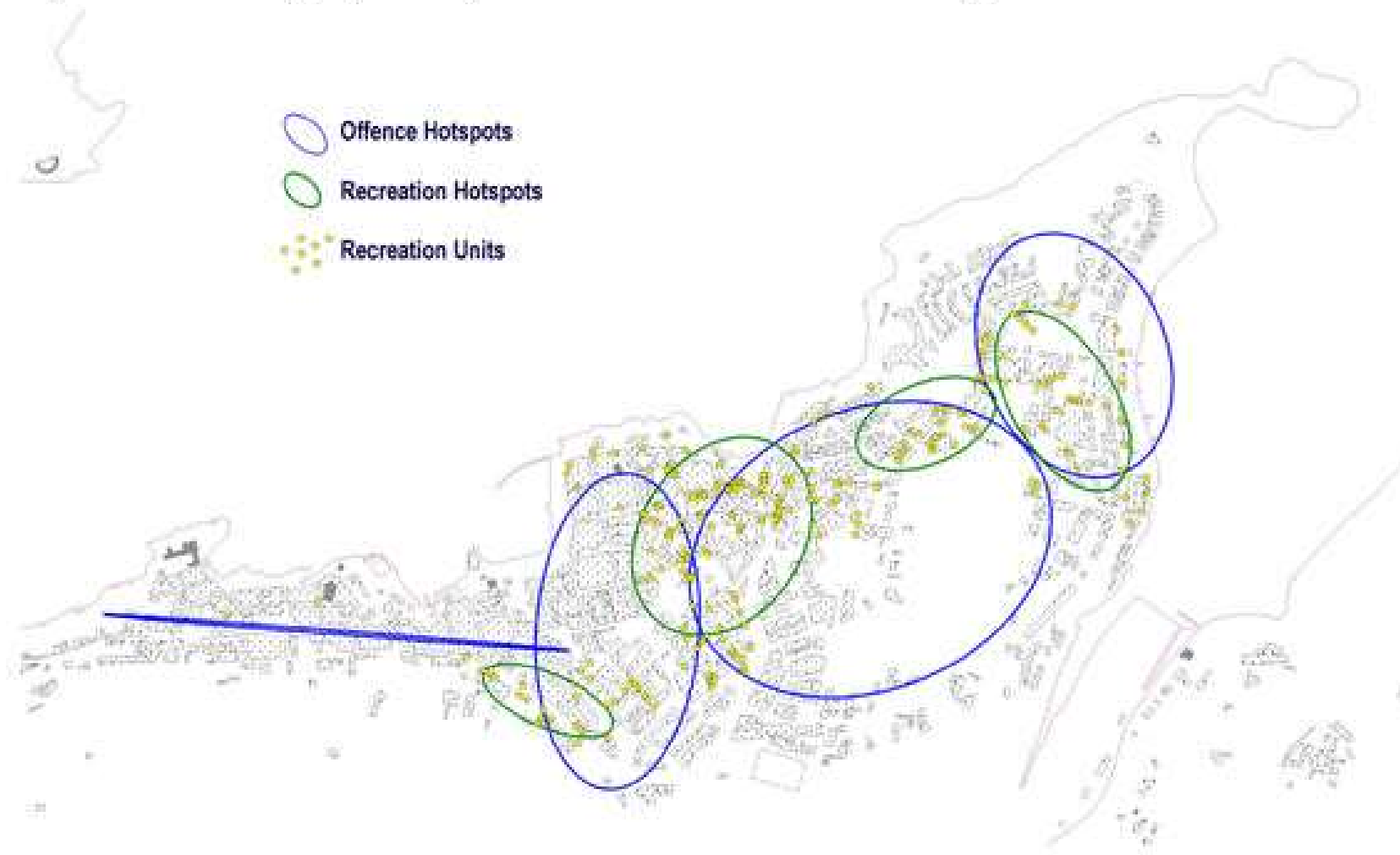


Figure 9.13d: 2001 - 2002

Offence Hotspots: spatial – Retail Crime



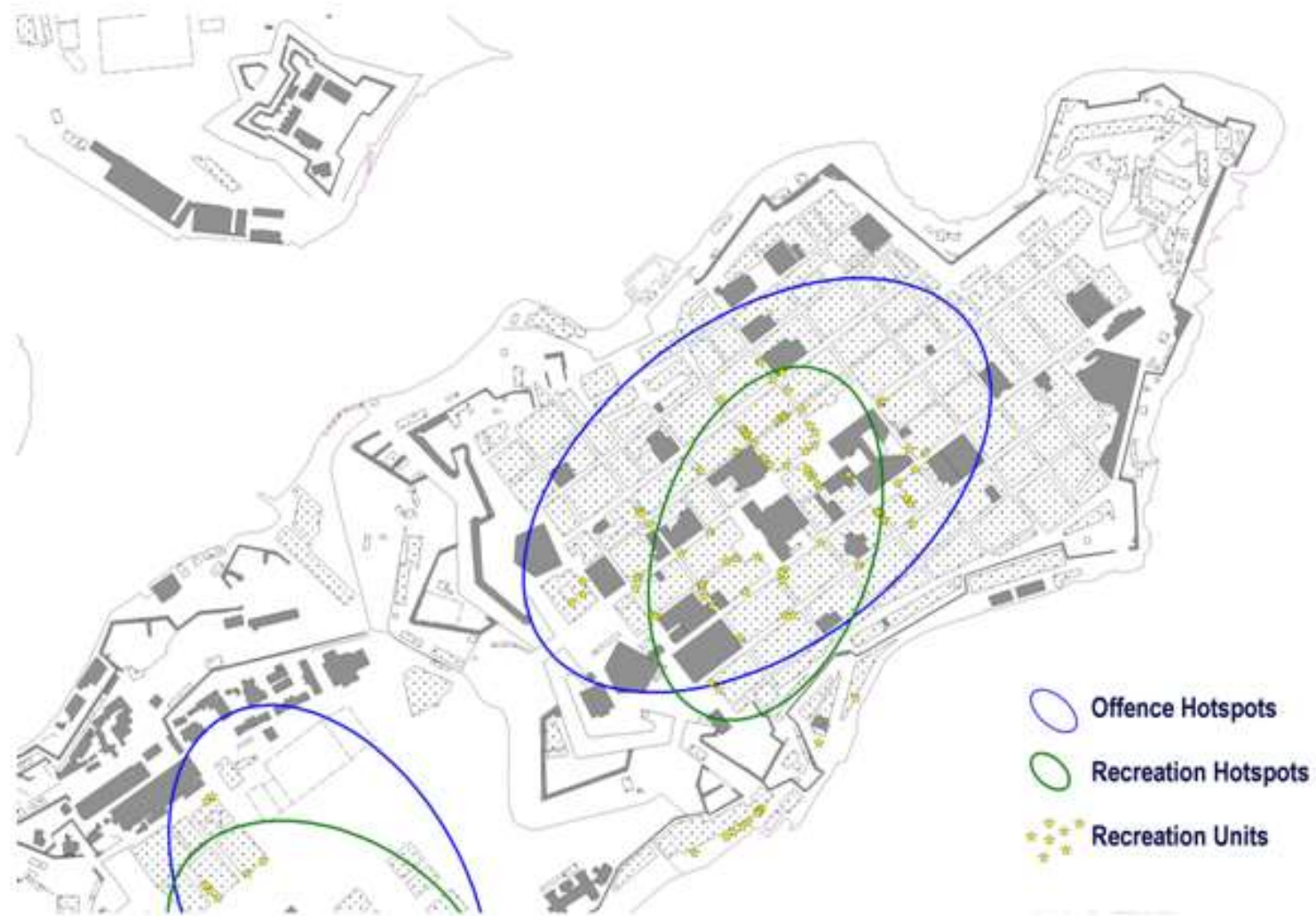
Figure 9.22d NNH *geopol* hotspots overlaid over recreational hotspots - San Pawl il-Bahar



Offence Hotspots: spatial – Retail Crime



Figure 9.24a: NNH geopol hotspots overlaid on recreational hotspots - Valletta



Offence Hotspots: spatial – Retail Crime

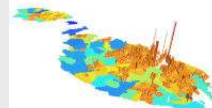
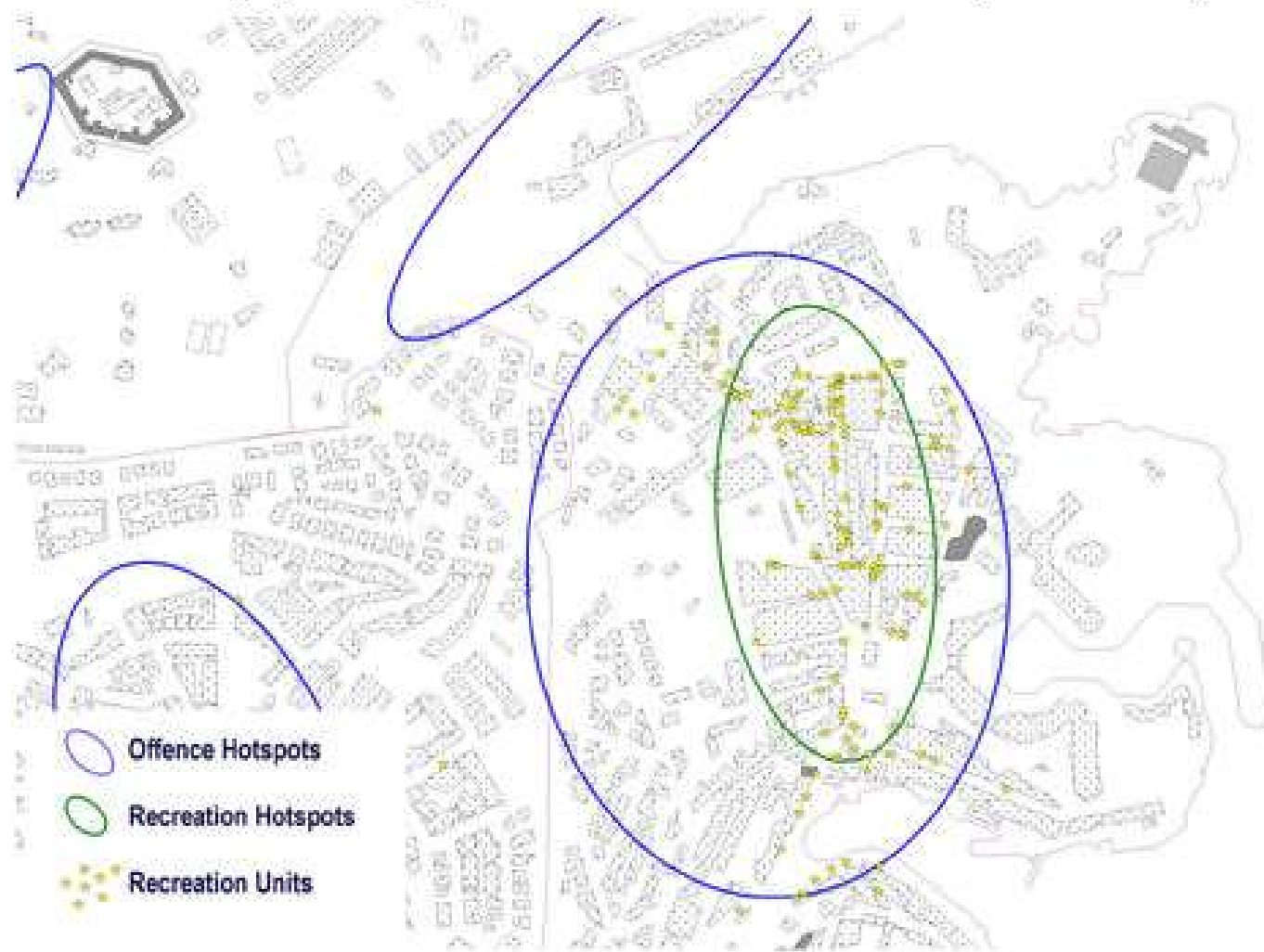
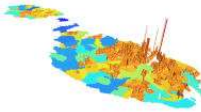


Figure 9.22b NNH *geopol* hotspots overlaid over recreational hotspots - San Giljan



Buffer Analysis: Retail Impacts on the Neighbourhoods



San Giljan Case Study

Inner Zones

*Serious Crimes,
Theft and Damage*

Middle Zones

Damage & Vehicle Crime

Outer Zones

*Vehicle, Damage
Residential Burglaries*

Mitigation: Requires effective
policing and SIAs

Success: reduction of >10%
*In Dragonara Road:
Simple installation of lighting/CCTV*



Figure 9.22a: Aerial Photo: 2004 – Source MEPA
(marked areas indicate photo locations)

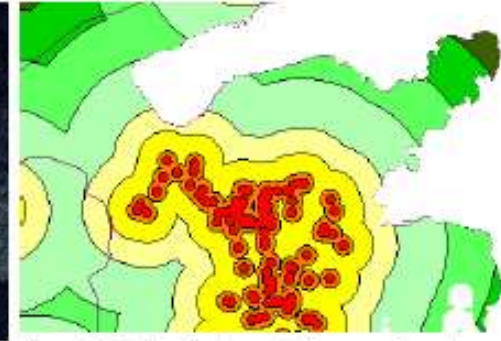


Figure 9.22b: Buffer Zones (red-orange: footprint zone,
yellow-target zone, the rest represent successive buffers)



Figure 9.22c: Footprint Zone



Figure 9.22d: Target Zone



Figure 9.22e: Residential Zones



Figure 9.22f: Dragonara Road, Paceville, San Giljan

Offence NNA: spatial – Type by spread – Most effected



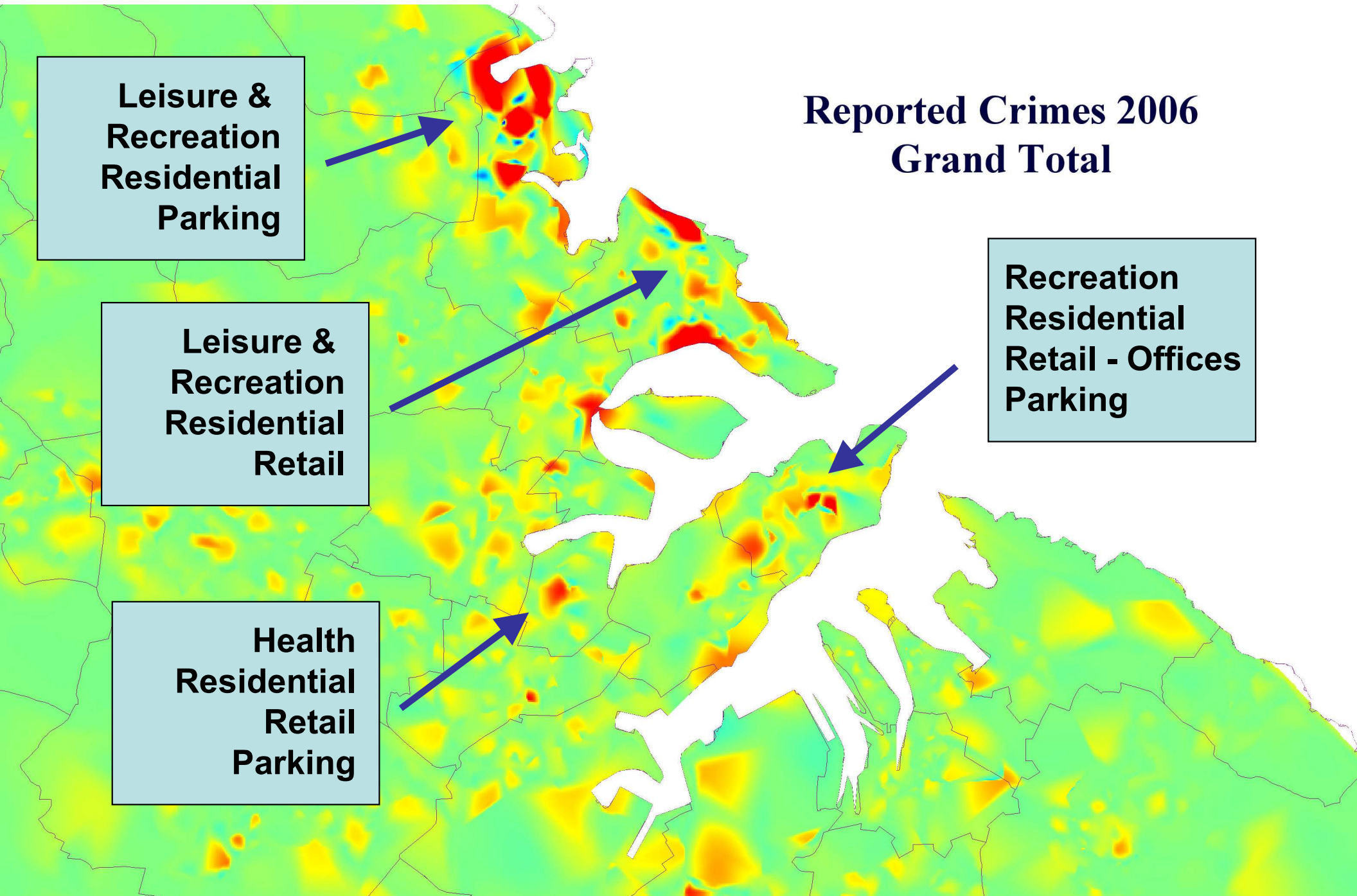
Reported Crimes 2006 Grand Total

Leisure & Recreation
Residential
Parking

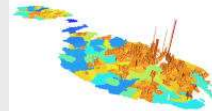
Leisure & Recreation
Residential
Retail

Health
Residential
Retail
Parking

Recreation
Residential
Retail - Offices
Parking



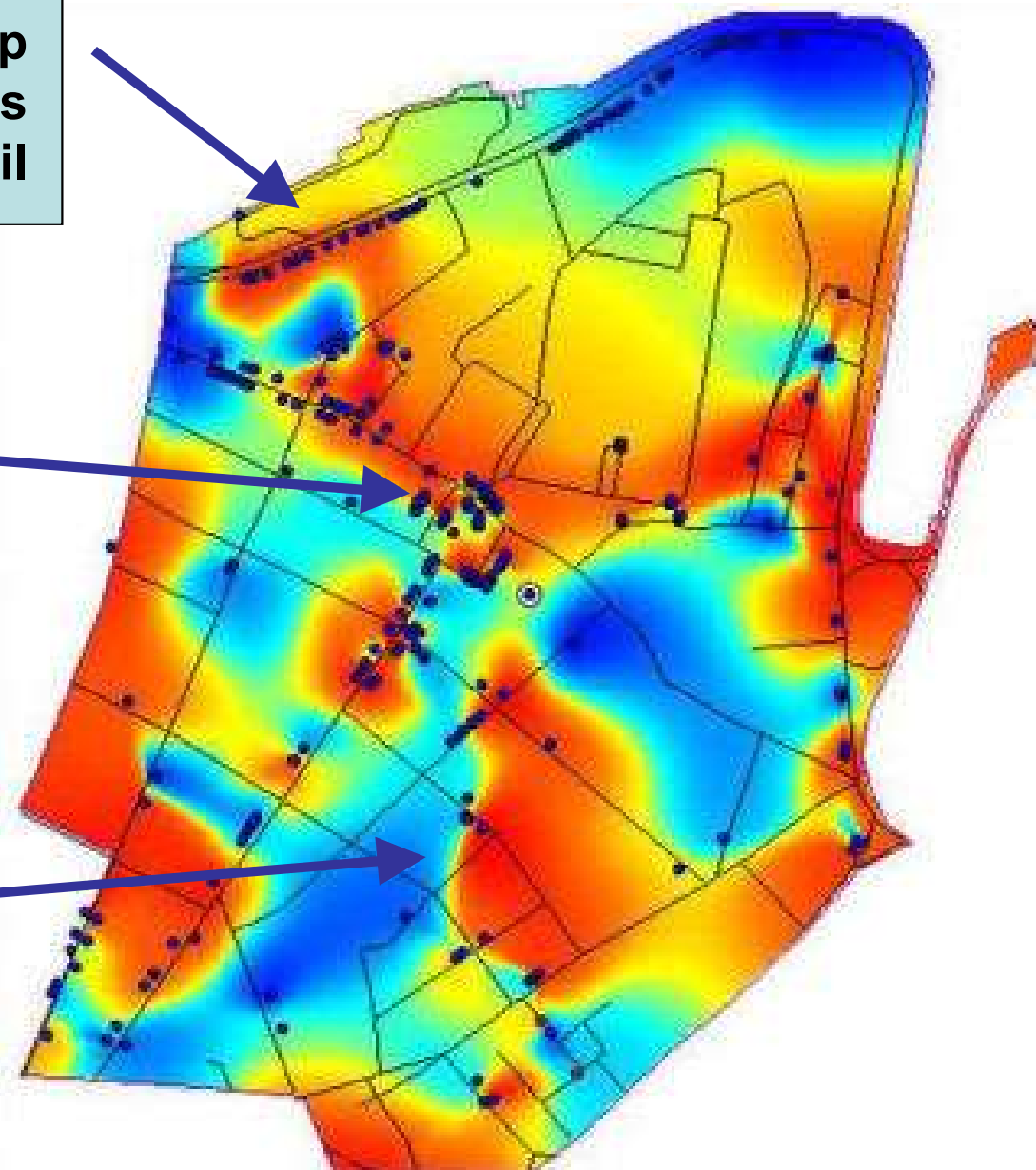
Offence NNA: spatial – Type by spread – Pieta Detailed



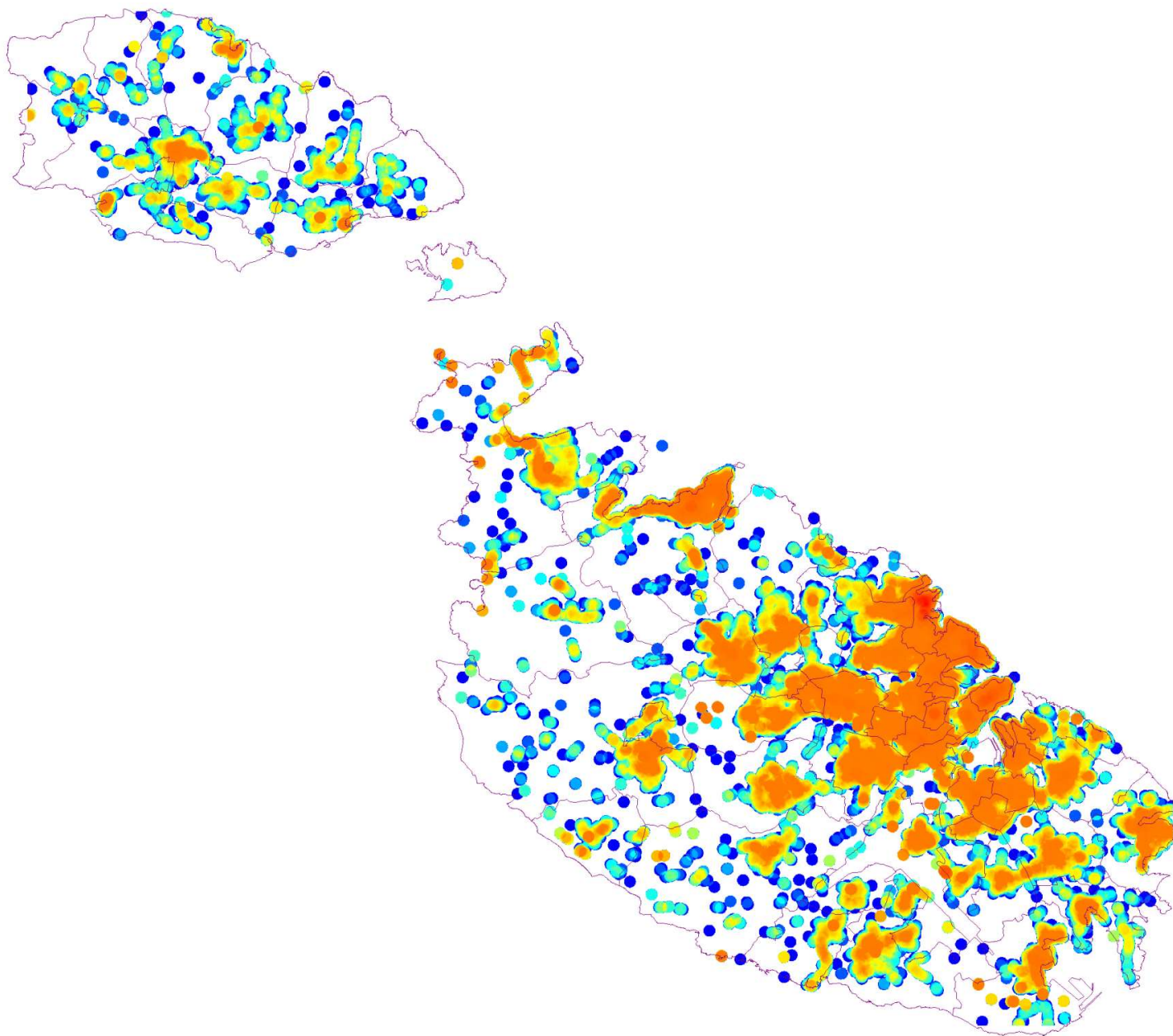
**Marina
Bus Stop
Traffic Lights
Retail**

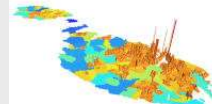
**St. Luke's Hospital
Detox
Bus Terminus
Parking Space**

**Housing Estate
Political Party HQs
Schools
Sports & Retail**

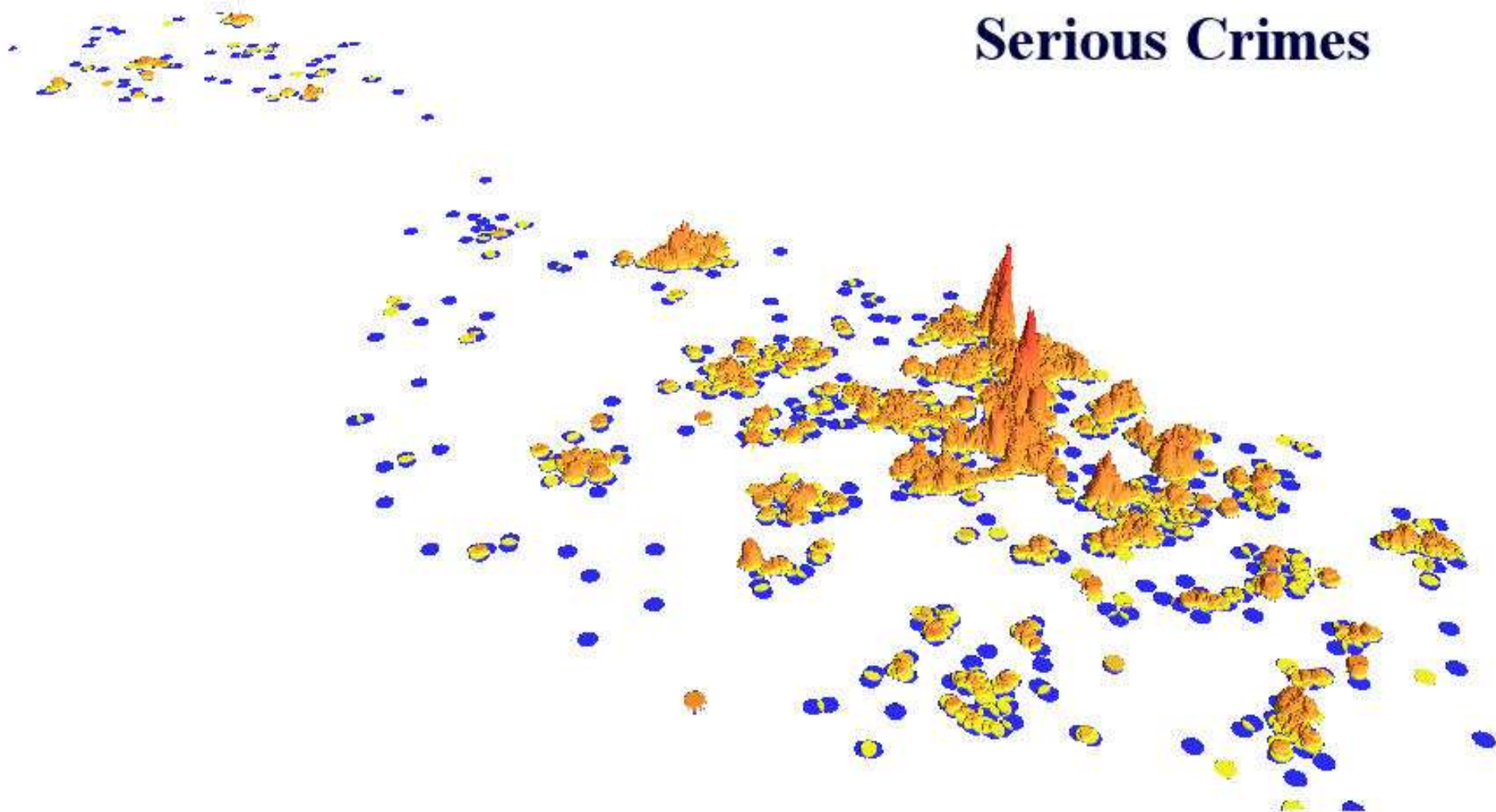


Offence NNA: spatial – Type by spread – top perspective



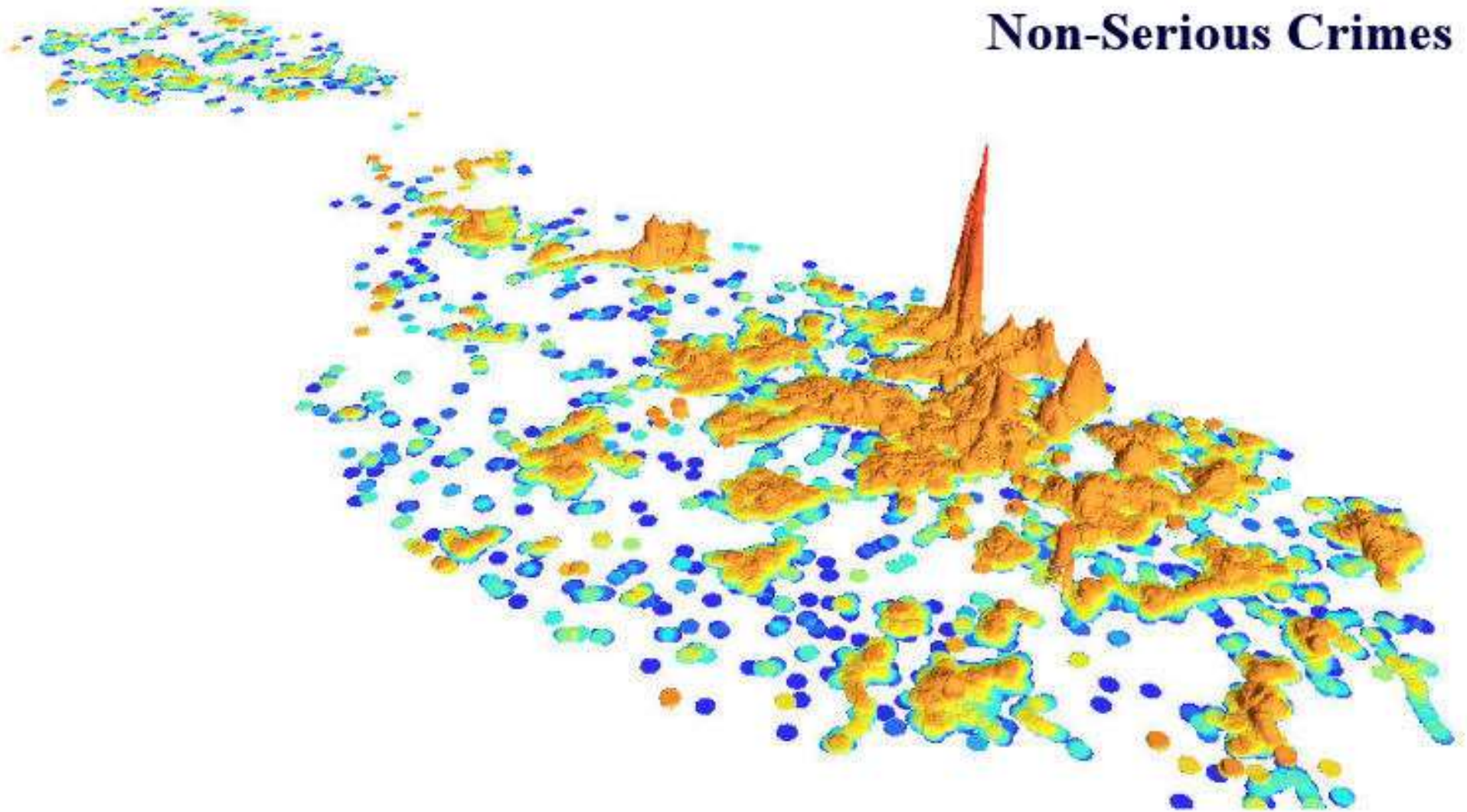


Serious Crimes

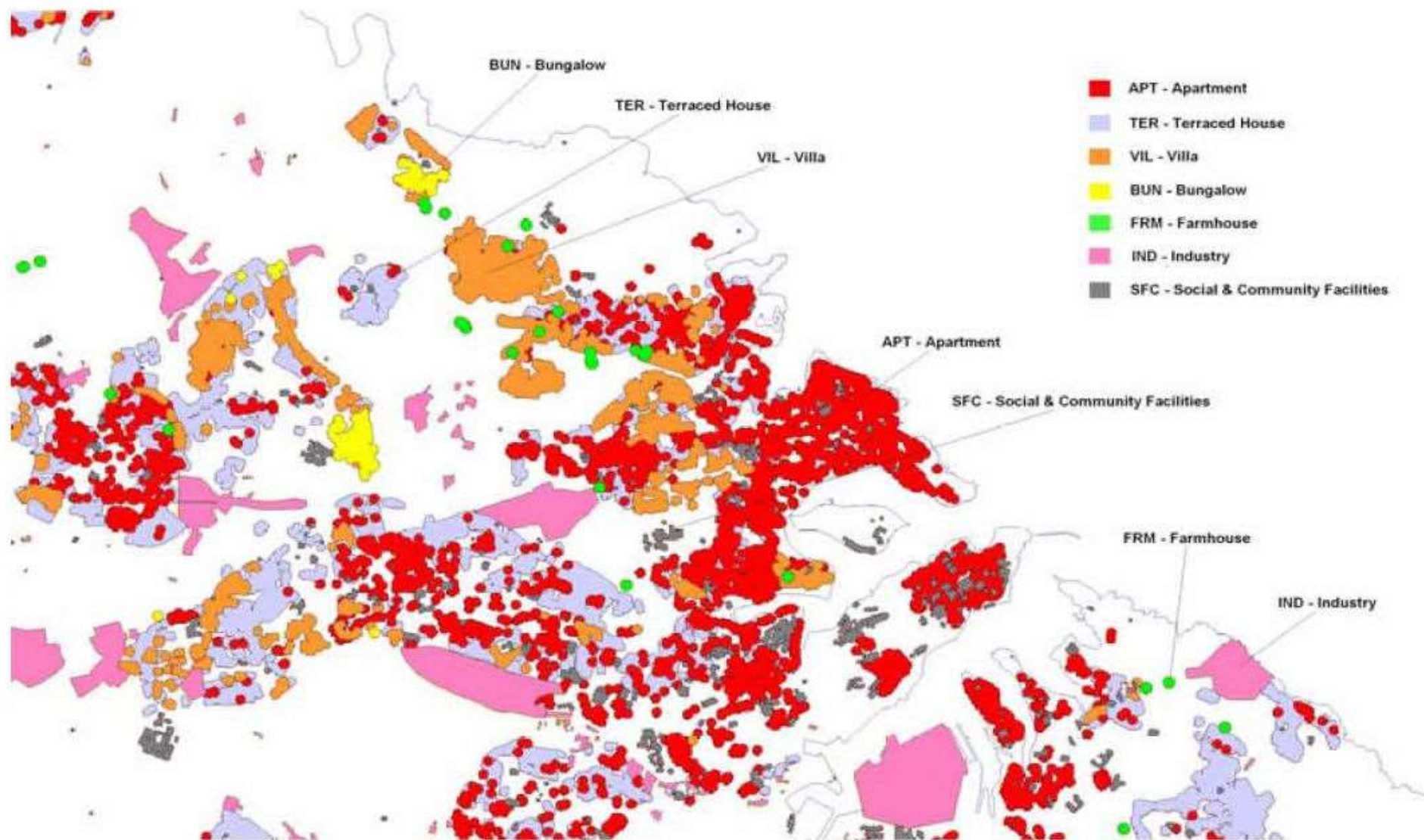
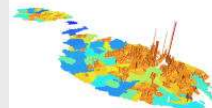




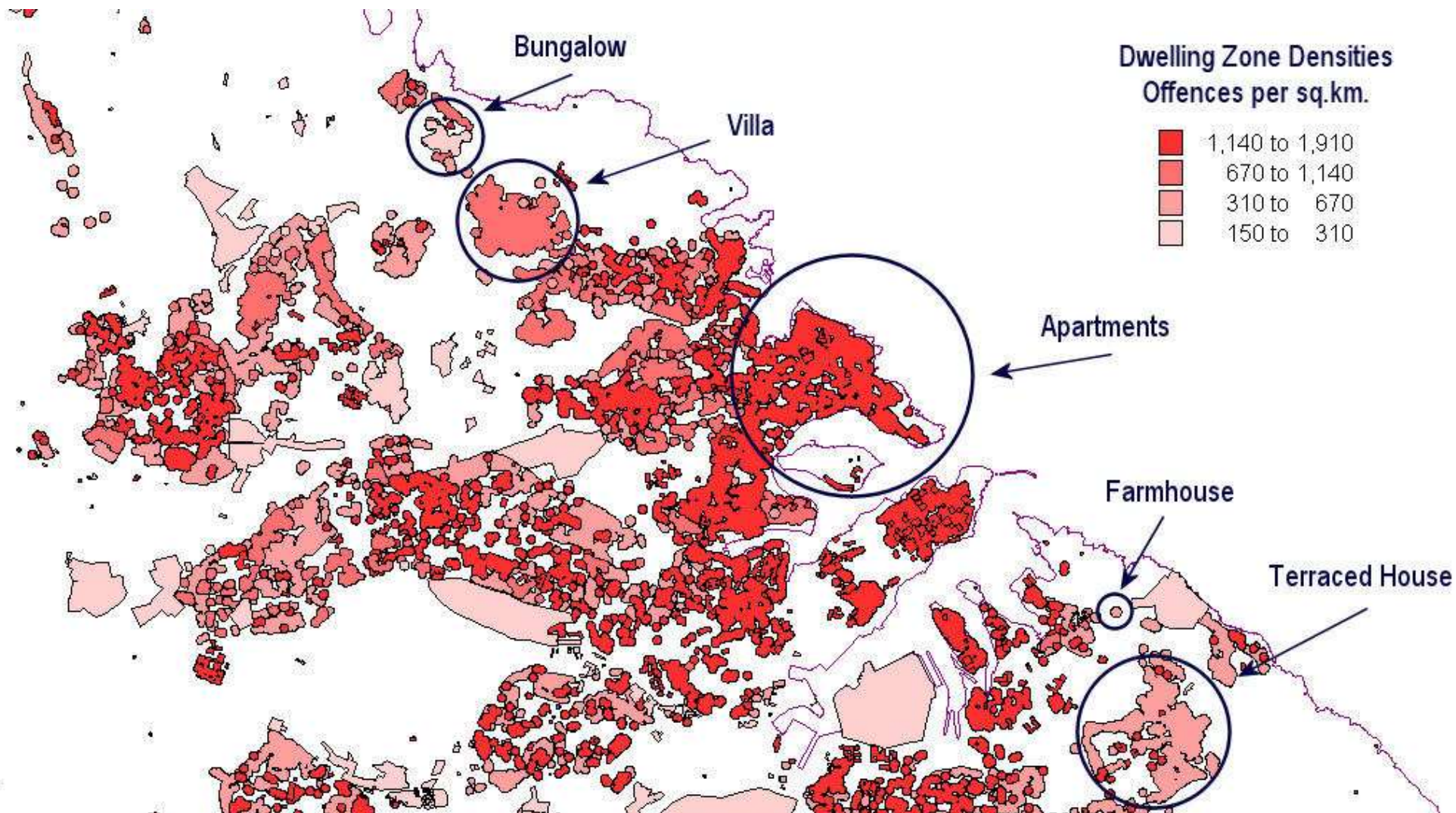
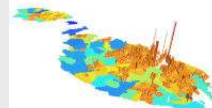
Non-Serious Crimes

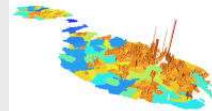


Offence constructs: zoning



Offence constructs: zoning offences





malta**today** on sunday

FRONT PAGE | TOP NEWS | EDITORIAL | OPINION | INTERVIEW | LETTERS | CULTURE

GO TO **WEDNESDAY** EDITION ▶

NEWS | Sunday, 05 August 2007

Gzira to switch off the red light

GERALD FENECH

Testaferrata Street has long been stigmatised for various reasons. With its prostitutes and run-down buildings, apart from the general neglect of the area, it has surely been crying out for re-generation. And that appears to be on the cards, with a massive new project has finally been approved for site of the former Mira Buildings.

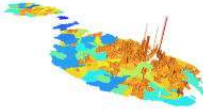


Elementary Dear Watson!

WHERE TO?

A Criminologist's Development nightmare
Need for Social Impact Assessments

New York is the only city where people make radio requests like,
'This is for Tina. I'm sorry I stabbed you.'
Carol Liefer

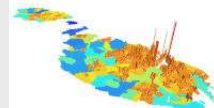


RISC

Relative Index of Spatial Crime

A Model for the Maltese Islands

What is a RISC?



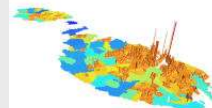
The RISC Model enables a multi-dimension analysis by:

- theme
- spatial
- temporal

This methodology enables the analysis of national to small area comparisons across the CRISOLA parameters.

The formula is based on:

- Observed Offences,
- Expected Offences, and
- Standard (National Rates)



Colour-coding RISC!

Colour	Risk of Crime as against the National Rate	Hotspot Level
	Zero Risk: No Crimes Reported - 0	
	Low Risk: Less than National Rate - <1x	
	National Risk: Equal to National Rate = 1x	
	High Risk: Up to Twice the National Rate - 2x	
	Very High Risk: Between Twice and up to Five times the National Rate - 2x to 5x	
	Extremely High Risk: Over Five times the National Rate - >5x	

Risk of Crime	Grand Total	Risk of Crime	Grand Total	Risk of Crime	Grand Total	Risk of Crime	Grand Total	Risk of Crime	Grand Total	Risk of Crime	Grand Total	Risk of Crime	Grand Total	Risk of Crime	Grand Total
Council	1998	Council	1999	Council	2000	Council	2001	Council	2002	Council	2003	Council	2004	Council	2005
SAN GILJAN	564	SAN GILJAN	603	SAN GILJAN	674	SAN GILJAN	627	SAN GILJAN	584	SAN GILJAN	622	SAN GILJAN	659	SAN GILJAN	580
SAN PAWL IL-BAHAR	383	SAN PAWL IL-BAHAR	391	MDINA	481	MDINA	433	MDINA	537	MDINA	379	MDINA	483	MDINA	428
MDINA	348	MDINA	378	SAN PAWL IL-BAHAR	375	SAN PAWL IL-BAHAR	421	SAN PAWL IL-BAHAR	355	VALLETTA	343	VALLETTA	387	SAN PAWL IL-BAHAR	340
FLORIANA	232	FLORIANA	311	FLORIANA	290	FLORIANA	272	VALLETTA	293	SAN PAWL IL-BAHAR	342	SAN PAWL IL-BAHAR	326	VALLETTA	287
VALLETTA	227	VALLETTA	260	MELLIIEHA	251	FLORIANA	264	GUDJA	262	GUDJA	256	FLORIANA	256	FLORIANA	263
TA' XBIEX	201	PIETA	236	GUDJA	232	VALLETTA	232	FLORIANA	220	SLIEMA	221	SLIEMA	234	SLIEMA	231
SLIEMA	198	TA' XBIEX	221	VALLETTA	215	VALLETTA	197	SLIEMA	201	FLORIANA	203	GUDJA	212	PIETA	193
MELLIIEHA	197	MUNXAR	206	SLIEMA	208	TA' XBIEX	190	TA' XBIEX	207	PIETA	179	PIETA	198	TA' XBIEX	188
PIETA	195	MELLIIEHA	199	TA' XBIEX	205	MELLIIEHA	180	PIETA	169	MELLIIEHA	163	PEMBROKE	168	GUDJA	165
GUDJA	189	SLIEMA	198	PIETA	183	MARSASCALA	163	MSIDA	166	MARSA	161	TA' XBIEX	159	MELLIIEHA	164
MARSASCALA	187	GUDJA	187	SWIEQI	158	PIETA	161	MELLIIEHA	166	TA' XBIEX	160	MARSA	146	MSIDA	149
MUNXAR	175	MARSASCALA	175	MARSA	155	MSIDA	155	MARSA	154	MUNXAR	141	MSIDA	144	MARSA	129
MARSA	159	MARSA	154	MSIDA	145	MARSA	151	MUNXAR	137	MARSASCALA	136	MARSASCALA	135	PEMBROKE	129
MARSAXLOKK	149	MSIDA	147	MUNXAR	140	GHASRI	145	MARSASCALA	136	MSIDA	136	MELLIIEHA	133	MARSASCALA	124
MSIDA	145	XGHAJRA	144	MARSASCALA	132	GZIRA	139	PEMBROKE	120	GZIRA	120	KIRKOP	120	XGHAJRA	111
BIRZEBBUGIA	141	PEMBROKE	125	PEMBROKE	130	MUNXAR	132	GZIRA	117	PEMBROKE	116	BIRZEBBUGIA	102	MUNXAR	110
SWIEQI	124	SWIEQI	119	ZEBBUB (Ghawdex)	117	PEMBROKE	131	XGHAJRA	116	ZEBBUB (Ghawdex)	109	GZIRA	101	BIRZEBBUGIA	108
GHASRI	124	GZIRA	113	BIRZEBBUGIA	113	SWIEQI	131	HAMRUN	111	BIRZEBBUGIA	105	SWIEQI	92	SAN LAWRENZ	108
GZIRA	120	ZEBBUB (Ghawdex)	112	MARSAXLOKK	101	XGHAJRA	126	ZEBBUB (Ghawdex)	106	HAMRUN	105	HAMRUN	91	ZEBBUB (Ghawdex)	106
PEMBROKE	118	KALKARA	107	GZIRA	100	SAN LAWRENZ	116	MARSAXLOKK	103	SWIEQI	101	ZEBBUB (Ghawdex)	90	HAMRUN	103
HAMRUN	115	MARSAXLOKK	100	XGHAJRA	94	MARSAXLOKK	108	BIRZEBBUGIA	98	PAOLA	98	XGHAJRA	89	PAOLA	99
MGARR	112	HAMRUN	100	GHASRI	92	HAMRUN	96	GHAJNSIELEM	93	SAN LAWRENZ	90	PAOLA	89	GZIRA	95
ZEBBUB (Ghawdex)	111	BIRZEBBUGIA	99	HAMRUN	91	ZEBBUB (Ghawdex)	88	SWIEQI	87	MARSAXLOKK	84	MGARR	87	RABAT (Malta)	94
QRENDI	105	GHASRI	97	PAOLA	90	GHAJNSIELEM	87	BIRGU	86	GHAJNSIELEM	82	LUQA	83	MARSAXLOKK	91
XGHAJRA	100	BORMLA	91	BORMLA	80	PAOLA	86	PAOLA	85	KIRKOP	81	BIRGU	82	BORMLA	91
KALKARA	97	PAOLA	87	ATTARD	79	LUQA	85	BALZAN	85	BALZAN	78	MUNXAR	81	GHAJNSIELEM	90
KIRKOP	94	QRENDI	87	ATTARD	78	QRENDI	82	MGARR	81	SANTA VENERA	75	BORMLA	80	SWIEQI	86
BORMLA	90	BIRGU	79	MTARFA	78	BORMLA	80	BIRKIRKARA	80	BORMLA	72	MARSAXLOKK	80	BIRGU	86
SANTA VENERA	87	GHAJNSIELEM	79	KALKARA	76	BALZAN	80	GHASRI	79	ATTARD	71	RABAT (Malta)	75	BALZAN	85
BIRGU	86	SAN LAWRENZ	79	LJJA	74	BIRZEBBUGIA	80	QRENDI	78	NAXXAR	71	QORMI	70	KALKARA	81
BALZAN	83	MGARR	78	NAXXAR	73	NAXXAR	78	ATTARD	76	SAN GWANN	69	BIRKIRKARA	69	NAXXAR	77
PAOLA	78	BIRKIRKARA	74	BALZAN	72	BIRKIRKARA	70	BORMLA	74	MGARR	68	GHAJNSIELEM	65	SANTA VENERA	76
LUQA	72	BALZAN	73	DINGLI	71	SANTA VENERA	69	LUQA	73	KALKARA	66	NAXXAR	65	MTARFA	75
BIRKIRKARA	66	DINGLI	70	KIRKOP	70	KALKARA	66	KALKARA	71	LUQA	66	SANTA VENERA	63	LUQA	77
ISLA	66	KIRKOP	71	GHAJNSIELEM	68	ATTARD	65	NAXXAR	70	SAFI	64	BALZAN	61	MGARR	69
NAXXAR	65	ISLA	70	BIRKIRKARA	67	SAN GWANN	62	SANTA VENERA	70	MTARFA	63	SAFI	61	BIRKIRKARA	66
SIGGIEWI	65	SANTA VENERA	67	BIRGU	63	BIRGU	61	KIRKOP	67	BIRGU	62	RABAT (Victoria)	60	QORMI	65
RABAT (Malta)	64	NAXXAR	66	SANTA VENERA	63	SIGGIEWI	61	RABAT (Malta)	65	QORMI	62	GHASRI	57	SAN GWANN	63
SAN LAWRENZ	61	SIGGIEWI	65	KIRKOP	61	LJJA	61	DINGLI	62	BIRKIRKARA	61	KALKARA	56	GHASRI	63
ZEJTUN	58	MTARFA	63	MGARR	59	RABAT (Victoria)	60	LJJA	61	GHARB	57	SAN GWANN	55	ZEBBUB (Malta)	60
ATTARD	57	LUQA	62	QORMI	58	KALKARA	60	SIGGIEWI	60	XGHAJRA	56	MOSTA	53	LJJA	62
GHAJNSIELEM	55	LJJA	58	SIGGIEWI	57	MOSTA	54	RABAT (Victoria)	60	ISLA	56	ZEBBUB (Malta)	52	KIRKOP	59
GHARB	55	QORMI	58	SAN GWANN	56	FGURA	54	ZEBBUB (Malta)	57	QRENDI	54	LJJA	50	RABAT (Victoria)	59
RABAT (Victoria)	55	SAN GWANN	58	ZEBBUB (Malta)	55	QORMI	54	ZEJTUN	54	ZABBAR	53	QRENDI	48	ZABBAR	59
MTARFA	55	SAFI	56	TARXIEN	54	MTARFA	53	MOSTA	53	RABAT (Malta)	53	DINGLI	48	GHARGHUR	55
SAN GWANN	54	ATTARD	54	SAN LAWRENZ	53	SAFI	53	QORMI	53	ZEJTUN	53	ZABBAR	48	SIGGIEWI	54
MOSTA	53	MOSTA	52	ISLA	51	ZEBBUB (Malta)	52	MTARFA	52	GHASRI	53	NADUR	48	TARXIEN	52
SAFI	53	QALA	52	MOSTA	49	DINGLI	51	GHARB	51	FGURA	51	ZEJTUN	46	MOSTA	51
LJJA	52	FGURA	47	FGURA	48	ISLA	49	SAN GWANN	50	MOSTA	50	ISLA	45	ZEJTUN	54
QORMI	52	ZEJTUN	47	RABAT (Malta)	47	ZEJTUN	48	FGURA	49	LJJA	49	GHARGHUR	47	RABAT (Malta)	51
DINGLI	50	RABAT (Malta)	46	QALA	46	RABAT (Malta)	47	XEWKJJA	46	SIGGIEWI	46	GHARGHUR	47	ZEJTUN	51
MQABBA	50	ZEBBUB (Malta)	45	ZURRIEQ	44	MGARR	46	SAN LAWRENZ	45	TARXIEN	48	GHARB	44	GHAXAQ	46
SANTA LUCIJA	49	XAGHRA	44	SANTA LUCIJA	42	XEWKJJA	44	TARXIEN	45	ZEBBUB (Malta)	48	SIGGIEWI	44	IKLIN	46
ZURRIEQ	49	ZABBAR	43	ZABBAR	42	TARXIEN	41	IKLIN	44	SANTA LUCIJA	48	ZURRIEQ	42	FGURA	45
NADUR	43	ZURRIEQ	43	IKLIN	41	ZABBAR	40	ZABBAR	43	IKLIN	45	SAFI	43	DINGLI	44
XAGHRA	43	RABAT (Victoria)	43	SANNAT	39	MQABBA	40	ISLA	42	GHAXAQ	43	SAN LAWRENZ	41	QRENDI	46
ZEBBUB (Malta)	42	GHARGHUR	41	RABAT (Victoria)	39	NADUR	40	FONTANA	41	GHARGHUR	45	MTARFA	39	SAFI	43
GHAXAQ	41	MQABBA	40	GHARGHUR	38	GHARGHUR	39	ZURRIEQ	40	RABAT (Victoria)	43	ATTARD	39	ATTARD	41
IKLIN	40	GHARB	40	XEWKJJA	36	ZURRIEQ	36	SAFI	39	DINGLI	43	QALA	38	NADUR	41
TARXIEN	39	NADUR	36	GHAXAQ	34	GHARB	35	KERCCEM	37	XAGHRA	40	XEWKJJA	36	ZURRIEQ	37
SANNAT	38	IKLIN	36	ZEJTUN	34	XAGHRA	34	GHAXAQ	35	MQABBA	39	MQABBA	35	GHARB	37
GHARGHUR	37	XEWKJJA	33	NADUR	32	IKLIN	33	SANTA LUCIJA	30	FONTANA	35	ZURRIEQ	34	SANTA LUCIJA	35
FGURA	36	KERCCEM	33	GHARB	31	SANTA LUCIJA	33	GHARGHUR	33	KERCCEM	31	TARXIEN	33	XAGHRA	33
ZABBAR	35	GHAXAQ	33	SAFI	31	QALA	33	SANNAT	33	QALA	29	SANTA LUCIJA	31	KERCCEM	31
QALA	34	SANNAT	32	MQABBA	29	KERCCEM	30	SANTA LUCIJA	30	FONTANA	31	SANNAT	29	NADUR	32
XEWKJJA	30	TARXIEN	32	XAGHRA	27	GHAXAQ	28	XAGHRA	29	XEWKJJA	28	XAGHRA	30	MQABBA	25
FONTANA	27	SANTA LUCIJA	26	KERCCEM	21	FONTANA	26	QALA	29	NADUR	25	KERCCEM	26	QALA	23
KERCCEM	21	FONTANA	20	FONTANA	14	SANNAT	23	MQABBA	23	SANNAT	22	FONTANA	10	XEWKJJA	22

RISC MALTA - 1998-2006

GRAND TOTAL OFFENCES

Risk of Crime Theft from Res	Risk of Crime Theft from Res	Risk of Crime Theft from Res	Risk of Crime Theft from Res	Risk of Crime Theft from Res	Risk of Crime Theft from Res	Risk of Crime Theft from Res	Risk of Crime Theft from Res	Risk of Crime Theft from Res	Risk of Crime Theft from Res	Risk of Crime Theft from Res	Risk of Crime Theft from Res						
Council	1998	Council	1999	Council	2000	Council	2001	Council	2002	Council	2003	Council	2004	Council	2005	Council	2006
XGHAJRA	687	SAN PAWL IL-BAHAR	661	SAN PAWL IL-BAHAR	434	SAN PAWL IL-BAHAR	704	MDINA	599	SAN PAWL IL-BAHAR	479	GHASRI	395	SAN LAWRENZ	613	SAN PAWL IL-BAHAR	392
SAN PAWL IL-BAHAR	599	XGHAJRA	318	MELLIEHA	349	GHASRI	671	SAN PAWL IL-BAHAR	506	MUNXAR	334	SAN PAWL IL-BAHAR	324	MELLIEHA	415	MELLIEHA	342
SAN GILJAN	346	ZEBBUG (Ghawdex)	297	SAN GILJAN	318	SAN LAWRENZ	341	SAN GILJAN	336	GHASRI	301	SAN GILJAN	323	SAN PAWL IL-BAHAR	318	SAN GILJAN	294
GHASRI	315	SAN GILJAN	287	SWIEQI	310	SAN GILJAN	305	MELLIEHA	318	SAN LAWRENZ	301	XGHAJRA	252	SAN GILJAN	244	SWIEQI	243
ZEBBUG (Ghawdex)	314	MUNXAR	276	GHASRI	263	MELLIEHA	304	GHASRI	301	SAN GILJAN	288	MELLIEHA	234	MARSASCALA	195	SLIEMA	238
SWIEQI	309	SWIEQI	243	MUNXAR	235	XGHAJRA	251	LJA	278	SWIEQI	211	MARSASCALA	202	SANTA VENERA	185	MSIDA	188
TA' XBIEX	265	GHARB	221	SLIEMA	214	MARSASCALA	230	XGHAJRA	225	MELLIEHA	200	MQABBA	184	SWIEQI	172	VALLETTA	178
MARSASCALA	224	MELLIEHA	218	BALZAN	202	SANTA LUCIJA	178	MUNXAR	204	MARSASCALA	196	MSIDA	178	MUNXAR	164	MARSASCALA	166
MUNXAR	218	MARSASCALA	198	PEMBROKE	186	ZEBBUG (Ghawdex)	160	SLIEMA	188	GZIRA	195	FLORIANA	175	GHARGHUR	164	PEMBROKE	162
MELLIEHA	209	LJA	184	LJA	178	LJA	153	HAMRUN	175	HAMRUN	159	KIRKOP	173	BALZAN	144	SAN LAWRENZ	159
GHARGHUR	179	BORMLA	181	ATTARD	175	SLIEMA	142	BALZAN	167	BALZAN	149	VALLETTA	161	SLIEMA	142	QRENDI	136
GHARB	174	GHASRI	151	ZEBBUG (Malta)	167	TA' XBIEX	139	SANNAT	166	MSIDA	148	SLIEMA	157	MSIDA	140	BALZAN	134
VALLETTA	169	MDINA	150	TA' XBIEX	165	MSIDA	137	SWIEQI	165	MDINA	147	SWIEQI	140	BIRZEBBUGIA	132	FLORIANA	129
BIRZEBBUGIA	156	BALZAN	134	MARSASCALA	157	SWIEQI	137	GHARB	163	SLIEMA	143	BIRZEBBUGIA	138	XGHAJRA	130	GHARGHUR	128
SLIEMA	155	SAFI	133	BORMLA	136	PAOLA	120	TA' XBIEX	159	MTARFA	140	MARSA	137	MARSA	127	ZURRIEQ	115
KIRKOP	153	HAMRUN	130	XGHAJRA	135	VALLETTA	119	SIGGIEWI	136	IKLIN	140	QORMI	129	MARSAXLOKK	115	XGHAJRA	113
IKLIN	151	VALLETTA	128	MDINA	131	MQABBA	118	SANTA VENERA	129	ISLA	129	ISLA	129	LJA	107	GZIRA	107
MARSAXLOKK	140	TA' XBIEX	127	MSIDA	121	GZIRA	115	MSIDA	125	SAFI	129	QRENDI	128	HAMRUN	109	NAXXAR	101
PEMBROKE	140	MSIDA	124	HAMRUN	113	LUQA	108	DINGLI	116	PEMBROKE	123	HAMRUN	126	GHAXAQ	109	TARXIEN	99
BALZAN	122	SAN GWANN	124	GUDJA	104	ATTARD	107	LUQA	112	BIRZEBBUGIA	123	GUDJA	123	IKLIN	107	HAMRUN	90
NAXXAR	120	NAXXAR	120	NAXXAR	103	BORMLA	101	MARSASCALA	107	MARSA	117	GZIRA	123	ZABBAR	106	MARSAXLOKK	89
KERCCEM	110	ATTARD	117	GZIRA	102	BIRKIRKARA	100	NAXXAR	106	PAOLA	116	LUQA	121	VALLETTA	105	BIRZEBBUGIA	86
MGARR	107	SLIEMA	105	PAOLA	99	XAGHRA	99	BORMLA	100	LJA	115	ZEBBUG (Ghawdex)	121	NAXXAR	104	LUQA	85
PIETA	106	BIRKIRKARA	104	BIRKIRKARA	92	MARSA	92	MGARR	99	SANTA LUCIJA	113	ISLA	115	SAN GWANN	96	MQABBA	84
SAN GWANN	102	BIRZEBBUGIA	104	LUQA	92	ISLA	95	RABAT (Malta)	98	BORMLA	108	SANNAT	114	GHASRI	94	PAOLA	84
FLORIANA	99	NADUR	100	MARSA	92	GHARGHUR	92	GZIRA	91	RABAT (Malta)	108	TA' XBIEX	110	QORMI	89	ZEJTUN	84
BIRKIRKARA	98	PAOLA	89	SAN LAWRENZ	88	BALZAN	91	BIRKIRKARA	88	GHARB	107	NAXXAR	106	PIETA	87	GHARB	83
MSIDA	97	ISLA	85	TARXIEN	81	TARXIEN	86	MOSTA	86	SIGGIEWI	103	KALKARA	105	LUQA	87	QORMI	82
LJA	96	QORMI	77	SANTA VENERA	79	MARSAXLOKK	83	GUDJA	81	MGARR	98	BORMLA	103	GZIRA	87	ISLA	82
ATTARD	90	FLORIANA	76	XAGHRA	78	QRENDI	82	ZURRIEQ	79	VALLETTA	95	ZURRIEQ	86	MTARFA	86	RABAT (Malta)	79
GZIRA	87	MTARFA	76	IKLIN	77	HAMRUN	81	VALLETTA	73	TA' XBIEX	95	SAFI	85	RABAT (Malta)	85	SAFI	78
DINGLI	82	SANTA VENERA	74	BIRZEBBUGIA	76	MTARFA	80	ISLA	72	ATTARD	91	BIRKIRKARA	83	MDINA	78	DINGLI	76
MTARFA	81	MOSTA	73	SAN GWANN	76	IKLIN	78	MTARFA	72	ZABBAR	81	SIGGIEWI	83	ZEBBUG (Malta)	77	MOSTA	74
MOSTA	81	SIGGIEWI	73	MGARR	70	KERCCEM	77	QALA	71	GUDJA	80	SANTA VENERA	80	BIRKIRKARA	76	GHAJNSIELEM	71
ISLA	74	GZIRA	70	SIGGIEWI	69	ZEBBUG (Malta)	73	MARSA	68	ZEBBUG (Malta)	76	PIETA	79	TARXIEN	76	SAN GWANN	69
BIRGU	69	FGURA	68	MTARFA	64	MGARR	66	FONTANA	68	QRENDI	73	RABAT (Malta)	78	PEMBROKE	75	BIRGU	67
SANTA LUCIJA	67	BIRGU	67	QORMI	64	BIRZEBBUGIA	65	ZEBBUG (Malta)	66	QALA	70	PAOLA	74	GUDJA	74	BORMLA	67
RABAT (Malta)	65	PEMBROKE	66	QALA	64	RABAT (Malta)	64	BIRZEBBUGIA	66	ZEBBUG (Ghawdex)	70	BALZAN	73	PAOLA	72	MARSA	63
HAMRUN	65	XAGHRA	60	ZEBBUG (Ghawdex)	63	KIRKOP	63	SANTA LUCIJA	65	LUQA	68	GHAXAQ	72	BORMLA	72	PIETA	61
BORMLA	60	KIRKOP	58	FONTANA	58	FGURA	63	PEMBROKE	63	SANNAT	65	ATTARD	69	MOSTA	67	FGURA	62
QORMI	50	GHARGHUR	57	SANNAT	58	MOSTA	62	PAOLA	58	SANTA VENERA	64	ZEBBUG (Malta)	67	KERCCEM	65	ATTARD	58
TARXIEN	49	ZABBAR	57	VALLETTA	56	SANTA VENERA	61	KIRKOP	57	TARXIEN	62	ZABBAR	64	ZURRIEQ	64	KERCCEM	56
ZURRIEQ	49	TARXIEN	55	MARSAXLOKK	49	QORMI	60	ZEJTUN	57	RABAT (Victoria)	59	IKLIN	61	GHARB	64	ZEBBUG (Ghawdex)	55
ZABBAR	47	IKLIN	54	MOSTA	49	GHARB	59	MARSAXLOKK	57	XAGHRA	59	QALA	61	ZEBBUG (Ghawdex)	63	KALKARA	55
NADUR	45	ZEBBUG (Malta)	50	GHARB	48	SAN GWANN	58	GHARGHUR	55	DINGLI	57	LJA	60	FLORIANA	62	LJA	55
GHAXAQ	44	MARSA	48	ZABBAR	46	PIETA	56	TARXIEN	55	KIRKOP	57	BIRGU	59	QRENDI	60	FONTANA	54
SIGGIEWI	42	MGARR	40	FGURA	40	BIRGU	55	ZABBAR	53	MOSTA	53	NADUR	58	ATTARD	59	MUNXAR	53
ZEBBUG (Malta)	41	RABAT (Malta)	39	ISLA	37	GHAJNSIELEM	52	SAN GWANN	53	ZURRIEQ	52	MOSTA	58	TA' XBIEX	58	ZEBBUG (Malta)	52
SANTA VENERA	38	PIETA	38	GHAXAQ	36	NAXXAR	50	QORMI	48	SAN GWANN	52	PIETA	51	ISLA	51	ZABBAR	52
ZEJTUN	38	MARSAXLOKK	38	ZURRIEQ	34	ZABBAR	49	GHAJNSIELEM	44	PIETA	51	GHARGHUR	51	GHARB	51	SANTA VENERA	51
KALKARA	36	KERCCEM	35	DINGLI	34	FLORIANA	43	XAGHRA	45	BIRKIRKARA	51	GHARB	51	BORMLA	51	TA' XBIEX	51
SANNAT	36	XEWKJJA	35	RABAT (Malta)	34	QALA	40	GHAXAQ	41	BIRGU	50	SANTA LUCIJA	42	ZEJTUN	51	MGARR	47
SAFI	35	KALKARA	35	PIETA	33	ZEJTUN	40	NADUR	41	NAXXAR	50	FGURA	40	MGARR	48	XAGHRA	47
MARSA	30	SANTA LUCIJA	32	KERCCEM	30	SAFI	36	PIETA	39	QORMI	45	XAGHRA	38	FGURA	47	KIRKOP	45
PAOLA	26	LUQA	31	KALKARA	30	SIGGIEWI	35	FGURA	36	GHAXAQ	41	RABAT (Victoria)	41	FLORIANA	41	BIRKIRKARA	44
GHAJNSIELEM	26	QRENDI	25	BIRGU	29	NADUR	31	ZEBBUG (Ghawdex)	36	FGURA	37	PEMBROKE	41	BIRGU	41	SAN GWANN	39
QRENDI	26	GUDJA	20	SAFI	28	GHAXAQ	31	BIRGU	34	FLORIANA	40	SAN GWANN	34	FONTANA	41	GUDJA	32
MQABBA	23	ZURRIEQ	20	KIRKOP	25	RABAT (Victoria)	28	SAFI	33	MARSAXLOKK	37	KERCCEM	31	SAFI	40	NADUR	32
FGURA	22	DINGLI	20	GHARGHUR	25	PEMBROKE	23	RABAT (Victoria)	25	ZEJTUN	36	XEWKJJA	30	SANTA LUCIJA	40	SIGGIEWI	32
GUDJA	21	ZEJTUN	15	NADUR	24	KALKARA	19	QRENDI	25	KERCCEM	35	MGARR	17	NADUR	33	IKLIN	28
XEWKJJA	18	GHAXAQ	14	GHAJNSIELEM	21	XEWKJJA	19	ATTARD	24	XEWKJJA	34	DINGLI	17	XEWKJJA	31	QALA	28
XAGHRA	16	RABAT (Victoria)	8	FLORIANA	17	ZURRIEQ	15	MQABBA	21	KALKARA	34	ZEJTUN	14	XAGHRA	27	XEWKJJA	27
LUQA	11	FONTANA	0	RABAT (Victoria)	15	DINGLI	0	FLORIANA	20	GHARGHUR	27	FONTANA	0	MQABBA	26	SANNAT	26
FONTANA	0	GHAJNSIELEM	0	SANTA LUCIJA	14	FONTANA	0	KALKARA	17	NADUR	27	GHAJNSIELEM	0	SANNAT	20	RABAT (Victoria)	20
MDINA	0	MQABBA	0	ZEJTUN	9	GUDJA	0	XEWKJJA	17	GHAJNSIELEM	23	MARSAXLOKK	0	GHAJNSIELEM	14	GHAXAQ	11
QALA	0	QALA	0	MQABBA	0	MDINA	0	IKLIN	0	MQABBA	21	MTARFA	0	RABAT (Victoria)	10	GHASRI	0
RABAT (Victoria)	0	SAN LAWRENZ	0	QRENDI	0	MUNXAR	0	KERCCEM	0	FONTANA	0	MUNXAR	0	DINGLI	0	MDINA	0
SAN LAWRENZ	0	SANNAT	0	XEWKJJA	0	SANNAT	0	SAN LAWRENZ	0	XGHAJRA	0	SAN LAWRENZ	0	QALA	0	MTARFA	0

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THEY COME FROM RESIDENCE

Risk of Crime	Theft of from	Risk of Crime	Theft of from	Risk of Crime	Theft of from	Risk of Crime	Theft of from	Risk of Crime	Theft of from	Risk of Crime	Theft of from	Risk of Crime	Theft of from	Risk of Crime	Theft of from	Risk of Crime	Theft of from
Council	1998	Council	1999	Council	2000	Council	2001	Council	2002	Council	2003	Council	2004	Council	2005	Council	2006
SAN GILJAN	696	SAN GILJAN	678	SAN GILJAN	733	MDINA	929	MDINA	920	MDINA	766	MDINA	1375	MDINA	1152	MDINA	485
MDINA	423	FLORIANA	517	MDINA	580	SAN GILJAN	615	FLORIANA	440	SAN GILJAN	548	SAN GILJAN	642	SAN GILJAN	548	SAN LAWRENZ	424
FLORIANA	384	PIETA	362	FLORIANA	495	FLORIANA	468	SAN GILJAN	424	SAN PAWL IL-BAHAR	325	FLORIANA	421	FLORIANA	438	SAN GILJAN	359
MARSASCALA	357	TA' XBIEX	296	TA' XBIEX	298	SAN PAWL IL-BAHAR	314	SAN PAWL IL-BAHAR	331	FLORIANA	285	VALLETTA	314	PIETA	327	FLORIANA	308
SAN PAWL IL-BAHAR	263	SAN PAWL IL-BAHAR	293	MELLIEHA	292	TA' XBIEX	257	PIETA	256	VALLETTA	257	PEMBROKE	283	SAN PAWL IL-BAHAR	275	MSIDA	241
PIETA	239	VALLETTA	252	PIETA	271	PEMBROKE	244	MSIDA	224	PIETA	206	SAN PAWL IL-BAHAR	265	VALLETTA	244	TA' XBIEX	225
TA' XBIEX	239	MDINA	251	SAN PAWL IL-BAHAR	263	SLIEMA	220	TA' XBIEX	221	PEMBROKE	193	MARSASCALA	217	PEMBROKE	181	SAN PAWL IL-BAHAR	213
MELLIEHA	227	MELLIEHA	240	SWIEQI	248	SWIEQI	211	VALLETTA	217	SWIEQI	187	PIETA	207	TA' XBIEX	179	PEMBROKE	195
VALLETTA	195	MARSASCALA	224	SLIEMA	208	MARSASCALA	208	PEMBROKE	203	KIRKOP	166	KIRKOP	200	MARSA	174	VALLETTA	192
SWIEQI	184	SLIEMA	202	PEMBROKE	187	VALLETTA	206	MARSA	190	MARSA	164	MSIDA	184	BALZAN	169	BALZAN	183
PEMBROKE	179	MARSA	168	VALLETTA	179	MSIDA	202	SLIEMA	175	TA' XBIEX	164	MARSA	172	SLIEMA	159	GUDJA	168
GHASRI	162	SWIEQI	165	MSIDA	151	GZIRA	202	MARSASCALA	173	SLIEMA	162	SLIEMA	150	MSIDA	157	MELLIEHA	161
SLIEMA	157	PEMBROKE	159	MARSASCALA	144	PIETA	198	HAMRUN	160	HAMRUN	147	SWIEQI	144	RABAT (Malta)	152	GHASRI	154
MARSAXLOKK	140	MSIDA	159	MARSA	144	MARSA	169	BALZAN	143	MUNXAR	146	TA' XBIEX	144	MELLIEHA	148	MARSA	143
KIRKOP	130	DINGLI	151	DINGLI	122	BALZAN	135	SWIEQI	121	PAOLA	130	GZIRA	122	SWIEQI	141	HAMRUN	140
GZIRA	127	SAN LAWRENZ	137	HAMRUN	118	HAMRUN	131	MUNXAR	116	MARSASCALA	129	HAMRUN	115	BORMLA	140	KIRKOP	134
MSIDA	117	PAOLA	113	MTARFA	116	GUDJA	128	BIRKIRKARA	113	GUDJA	123	MELLIEHA	113	PAOLA	131	BIRGU	132
BORMLA	108	BORMLA	111	GUDJA	110	XGHAJRA	127	BORMLA	112	MSIDA	121	GUDJA	111	MARSASCALA	131	PIETA	132
BIRZEBBUGIA	106	GZIRA	109	PAOLA	109	MELLIEHA	112	MELLIEHA	112	SANTA VENERA	112	BIRKIRKARA	104	HAMRUN	127	BORMLA	130
HAMRUN	105	KALKARA	109	GHASRI	108	SANTA VENERA	99	PAOLA	110	GZIRA	109	RABAT (Malta)	99	BIRKIRKARA	103	RABAT (Malta)	124
MARSA	97	BALZAN	108	MARSAXLOKK	102	SAN GWANN	97	ATTARD	106	SAN LAWRENZ	101	BALZAN	95	SAN LAWRENZ	99	PAOLA	123
ZEBBUB (Ghawdex)	97	QRENDI	108	ATTARD	98	ATTARD	90	GZIRA	105	ATTARD	100	BIRZEBBUGIA	93	SANTA VENERA	94	SWIEQI	120
SANTA VENERA	92	MUNXAR	104	GZIRA	97	BIRKIRKARA	86	SANTA VENERA	102	MELLIEHA	91	BORMLA	79	KALKARA	82	SLIEMA	120
PAOLA	90	HAMRUN	101	BALZAN	98	KIRKOP	83	QRENDI	83	BIRZEBBUGIA	88	PAOLA	79	BIRGU	77	BIRKIRKARA	117
BALZAN	90	ISLA	95	TARXIEN	82	BORMLA	82	FGURA	88	ZABBAR	88	QORMI	74	TARXIEN	76	KALKARA	115
QRENDI	90	KIRKOP	92	QRENDI	80	DINGLI	75	GUDJA	87	BALZAN	86	SANTA VENERA	74	GHASRI	76	MGARR	111
BIRGU	87	GUDJA	85	BIRKIRKARA	78	PAOLA	72	ZEBBUB (Ghawdex)	85	SAN GWANN	86	GHASRI	74	ZABBAR	73	SANTA VENERA	111
ATTARD	82	FGURA	84	ZEBBUB (Ghawdex)	78	FGURA	67	XGHAJRA	84	BORMLA	84	SAN GWANN	73	FGURA	72	MARSASCALA	109
RABAT (Malta)	82	BIRKIRKARA	81	SAN GWANN	71	NAXXAR	66	TARXIEN	79	QORMI	82	DINGLI	69	SAN GWANN	72	MUNXAR	108
GUDJA	81	BIRGU	80	NAXXAR	71	MTARFA	64	GHASRI	77	FGURA	81	ZABBAR	67	GZIRA	70	TARXIEN	99
ISLA	78	GHASRI	76	BORMLA	69	TARXIEN	60	BIRZEBBUGIA	67	MARSAXLOKK	78	IKLIN	66	QORMI	69	GHAXAQ	98
KALKARA	75	SIGGIEWI	74	BIRZEBBUGIA	68	LUQA	60	KIRKOP	64	TARXIEN	78	MARSAXLOKK	64	GHAJNSIELEM	66	XGHAJRA	94
BIRKIRKARA	74	SANTA VENERA	66	KIRKOP	62	LJA	58	ZABBAR	64	KALKARA	73	LUQA	62	NAXXAR	65	BIRZEBBUGIA	91
SANTA LUCIJA	68	XGHAJRA	63	LUQA	61	MUNXAR	55	SAN GWANN	61	IKLIN	71	NAXXAR	62	MARSAXLOKK	65	ZABBAR	85
ZEJTUN	67	NAXXAR	62	SAN LAWRENZ	58	MOSTA	52	MGARR	61	LUQA	70	GHAJNSIELEM	60	BIRZEBBUGIA	62	LUQA	81
SAN LAWRENZ	65	BIRZEBBUGIA	58	FGURA	58	BIRGU	51	BIRGU	60	GHAJNSIELEM	70	LJA	55	KIRKOP	62	FGURA	77
SIGGIEWI	64	SAN GWANN	57	LJA	57	SAN LAWRENZ	50	RABAT (Malta)	60	BIRKIRKARA	69	FGURA	51	LJA	59	GZIRA	76
MUNXAR	60	MARSAXLOKK	54	IKLIN	56	QORMI	49	GHAJNSIELEM	56	SANTA LUCIJA	68	ZEJTUN	49	MGARR	58	GHAJNSIELEM	72
SAN GWANN	58	GHAJNSIELEM	54	SANTA VENERA	56	BIRZEBBUGIA	47	NAXXAR	55	NAXXAR	67	MOSTA	48	ZEBBUB (Ghawdex)	51	ZEBBUB (Ghawdex)	70
FGURA	57	ATTARD	53	QORMI	52	ZABBAR	44	SIGGIEWI	54	MTARFA	59	TARXIEN	48	GUDJA	50	ATTARD	69
MGARR	57	ZABBAR	50	XGHAJRA	52	ISLA	44	LJA	54	XGHAJRA	58	BIRGU	46	ISLA	48	NAXXAR	69
QORMI	57	QORMI	50	SANTA LUCIJA	52	SIGGIEWI	43	QORMI	54	ISLA	56	ZEBBUB (Ghawdex)	45	ZEBBUB (Malta)	47	SAN GWANN	68
ZABBAR	55	MTARFA	44	MUNXAR	48	RABAT (Malta)	40	KALKARA	52	ZEBBUB (Ghawdex)	53	MUNXAR	44	SIGGIEWI	46	LJA	67
XGHAJRA	50	MGARR	44	SIGGIEWI	47	ZEJTUN	38	MTARFA	49	RABAT (Malta)	51	KALKARA	44	ZEJTUN	45	ZEBBUB (Malta)	64
MTARFA	50	LUQA	43	ZABBAR	46	ZEBBUB (Malta)	37	ISLA	49	GHASRI	51	ISLA	42	FONTANA	44	QORMI	64
LUQA	49	IKLIN	41	MOSTA	45	ZEBBUB (Ghawdex)	35	MOSTA	47	ZEBBUB (Malta)	50	ZEBBUB (Malta)	39	XGHAJRA	44	ISLA	59
GHAXAQ	45	ZEBBUB (Ghawdex)	37	KALKARA	43	KALKARA	34	LUQA	46	MOSTA	49	ATTARD	36	SANTA LUCIJA	43	MOSTA	55
TARXIEN	44	ZEJTUN	37	RABAT (Malta)	39	MARSAXLOKK	33	ZEJTUN	43	ZEJTUN	46	SAFI	35	LUQA	40	IKLIN	54
FONTANA	44	MOSTA	34	ISLA	38	IKLIN	28	MARSAXLOKK	42	GHAXAQ	45	MTARFA	27	ATTARD	25	FONTANA	54
NAXXAR	42	TARXIEN	32	MGARR	34	MQABBA	26	ZEBBUB (Ghawdex)	44	BIRGU	44	GHARGHUR	24	RABAT (Malta)	23	GHARGHUR	52
MOSTA	40	RABAT (Malta)	30	ZEJTUN	30	GHASRI	25	SANTA LUCIJA	41	MARSAXLOKK	24	MARSAXLOKK	23	SAN LAWRENZ	22	ZEJTUN	51
GHARB	36	MQABBA	27	ZEBBUB (Malta)	29	MGARR	23	IKLIN	41	SIGGIEWI	35	RABAT (Victoria)	31	DINGLI	32	MTARFA	50
SAFI	34	GHARGHUR	23	ZURRIEQ	21	GHARGHUR	22	DINGLI	36	MQABBA	33	ZURRIEQ	30	SAFI	30	GHARGHUR	47
ZURRIEQ	32	ZURRIEQ	23	QALA	21	ZURRIEQ	19	SAN LAWRENZ	35	MGARR	33	MGARR	29	NADUR	29	RABAT (Victoria)	43
MQABBA	31	SANTA LUCIJA	23	MQABBA	20	GHAJNSIELEM	19	RABAT (Victoria)	35	IKLIN	28	XEWKJJA	28	SAFI	26	SAFI	43
ZEBBUB (Malta)	30	LJA	22	GHARGHUR	20	SANTA LUCIJA	17	GHAXAQ	24	LJA	32	GHAXAQ	27	LJA	26	SANTA LUCIJA	40
IKLIN	30	ZEBBUB (Malta)	21	GHAJNSIELEM	17	NADUR	16	SAFI	21	GHARB	27	SIGGIEWI	24	RABAT (Victoria)	21	SANNAT	39
RABAT (Victoria)	25	XAGHRA	18	GHAXAQ	17	QRENDI	15	MQABBA	21	QRENDI	27	XGHAJRA	22	QALA	17	SIGGIEWI	32
DINGLI	25	SAFI	16	GHARB	16	RABAT (Victoria)	15	ZURRIEQ	20	SAFI	26	SANTA LUCIJA	17	GHAXAQ	17	MARSAXLOKK	30
XAGHRA	20	NADUR	14	SANNAT	14	GHAXAQ	15	GHARGHUR	18	QALA	24	NADUR	15	ZURRIEQ	12	DINGLI	23
LJA	19	GHAXAQ	11	XEWKJJA	10	SAFI	10	XEWKJJA	18	ZURRIEQ	23	QRENDI	15	XEWKJJA	11	QALA	21
NADUR	18	XEWKJJA	9	FONTANA	10	XEWKJJA	8	XAGHRA	15	FONTANA	22	XAGHRA	10	GHARGHUR	9	QRENDI	18
GHAJNSIELEM	16	SANNAT	6	BIRGU	8	QALA	6	QALA	12	RABAT (Victoria)	18	GHARB	9	QRENDI	8	ZURRIEQ	16
KERCCEM	15	RABAT (Victoria)	3	RABAT (Victoria)	7	KERCCEM	6	FONTANA	12	XEWKJJA	14	MQABBA	6	XAGHRA	7	MQABBA	16
XEWKJJA	15	FONTANA	0	XAGHRA	6	SANNAT	5	SANNAT	11	XAGHRA	12	KERCCEM	6	KERCCEM	6	KERCCEM	14
GHARGHUR	12	GHARB	0	NADUR	6	FONTANA	0	NADUR	9	KERCCEM	12	QALA	6	SANNAT	5	XEWKJJA	14
SANNAT	7	KERCCEM	0	KERCCEM	5	GHARB	0	GHARB	9	SANNAT	5	FONTANA	0	MQABBA	3	NADUR	13
QALA	0	QALA	0	SAFI	4	XAGHRA	0	KERCCEM	0	NADUR	2	SANNAT	0	GHARB	0	XAGHRA	9

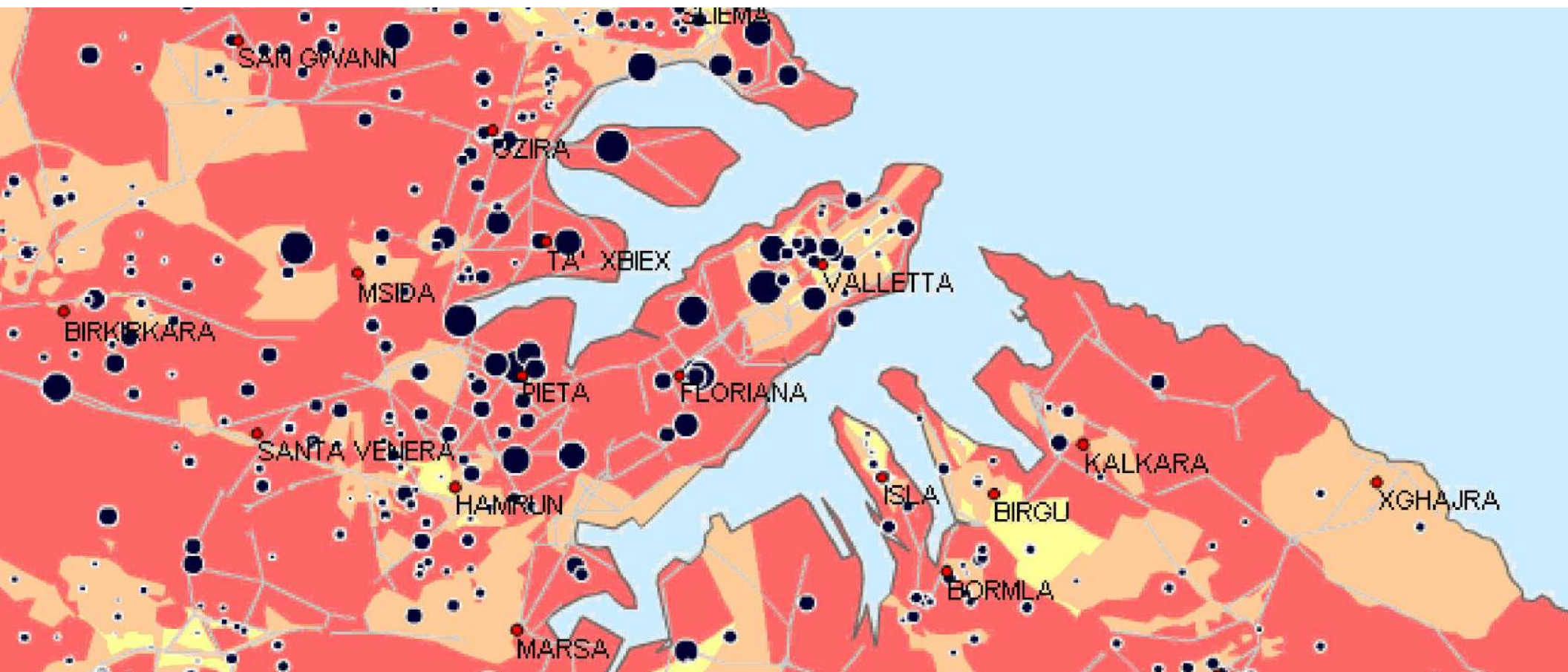
RISC MALTA - 1998-2006

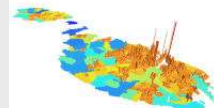
VEHICLE THEFT (FROM & TO)

RISC Case Studies



Case Study – The Enumeration Area RISC - 2006





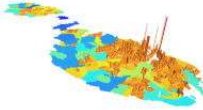
Who are the beneficiaries of such a Model?

- i) decision-maker at a national level
- ii) regional groups
- iii) local administrations
- iv) private entities
- iv) general public
- v) researchers

Scenarios for operation

- i) government: preparation of national security strategies
- ii) police: reduction of crime and spatio-temporal focus
- iii) local administrations: social capital – social cohesion
- iv) security agencies: provision of security services
- v) insurances: reassessment of policies based on RISC
- vi) real estate: knowledge of localities' safety records
- vii) general public: peace of mind and being more active
- v) researchers: ongoing research initiatives

The Future – Implementation Strategies



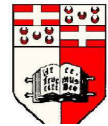
- Importance to **develop the GI area** for current and future upgrading of intelligence and safety
- Input of integrated hi-end technologies
- Research and analysis function in the ICT-GI area
- Reducing the potential for offence
- Predicting offences
- Enabling change studies of potential offences

Investigating Crime: giving a spatio-temporal hand to social and landuse decision makers

Conference - LOCATION: Exploiting the Benefits
05 December 2008



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