

# A Comparison of Future IDF Curves for Southern Ontario

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## Addendum – IDF Statistics, Curves and Equations

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## **1. PURPOSE OF THIS ADDENDUM**

This summary report is an Addendum to a larger technical report entitled “Comparison of Emerging Techniques for Updating Intensity-Duration-Frequency (IDF) Curves in Southern Ontario”.

The aim of this Addendum is to provide the Toronto and Region Conservation Authority and Essex Region Conservation Authority and their partners with IDF statistics, curve plots and equations in a form similar to Environment and Climate Change Canada’s official plots familiar to municipal staff and engineering consultants. Accompanying this summary is a PDF document of the selected plots and a text file summarizing the data.

## **2. STUDY BACKGROUND & OBJECTIVES**

### **2.1. IDF Statistics in Water Management**

Rainfall intensity-duration-frequency (IDF) statistics are used in many water management applications, including drainage design, stormwater and watershed planning, flooding and erosion risk management, and infrastructure operations. In Ontario for example, regulatory agencies, such as the Ministry of Transportation, Ministry of Environment and Climate Change, municipalities, and Conservation Authorities mandate the use of IDF statistics as one of the major criteria in the design of stormwater management systems<sup>1</sup>. Currently, many of these regulatory frameworks require the use of IDF statistics based on historical rainfall records, which are officially produced and updated by Environment Canada and available online<sup>2</sup>.

### **2.2. IDF Statistics and Climate Change**

Because IDF statistics have been deemed to be useful in expressing likelihoods of occurrence for a range of storm-event types in a given area, they have become a staple in water management. However, IDF statistics used in Ontario are based on historical time series data. Therefore, their ability to capture potential characteristics of future rainfall regimes associated with scenarios of climate change has been questioned. This is a key issue, as many studies have projected increases in the intensity and frequency of the extreme rainfall events that are of greatest concern to water managers under scenarios of climate change<sup>3</sup>. As a result of this, there is a need to understand how such changes might affect future IDF statistics. This is particularly relevant to the

design and planning of built and natural water management infrastructure, as it is designed for 50- to 100-year lifespans during which substantial change in rainfall regimes are projected<sup>3</sup>.

### **2.3. Uncertainty in Future IDF Statistics**

There is a rapidly emerging body of knowledge and guidance on the development and use future IDF statistics<sup>4</sup> that aims to account for the expected change in climate; however, there is also a lack of consensus on the most appropriate methods. This is due in large part to the wide array of distribution functions, future climate model datasets, downscaling methods, and future scenarios that could be used in creating future IDF statistics. With the large range of potential approaches available, there is the potential for significant variability among future IDF statistics for a given area. This variability and the current lack of consensus on the most adequate methods ultimately translates into uncertainty associated with the development of IDF statistics and on how climate change is projected to affect local rainfall regimes.

### **2.4. Study Objectives and Research Questions**

Given the potential variability among IDF statistics at the local or regional scale, the aim of this study was to understand the limitations and applicability of different techniques for updating IDF statistics in light of climate change for two local study sites in southern Ontario (Fig. 1): (1) Windsor-Essex Region (WER) and (2) the Greater Toronto Area (GTA). More specifically, we sought to answer the following research questions:

- What is the variability among IDF statistics when using a set of the most robust downscaled climate change datasets in each study area?
- What trends can be ascertained about future extreme rainfall based on the downscaled IDF statistics?
- Given the datasets used and the results of comparing them, what are the implications for water management practice?

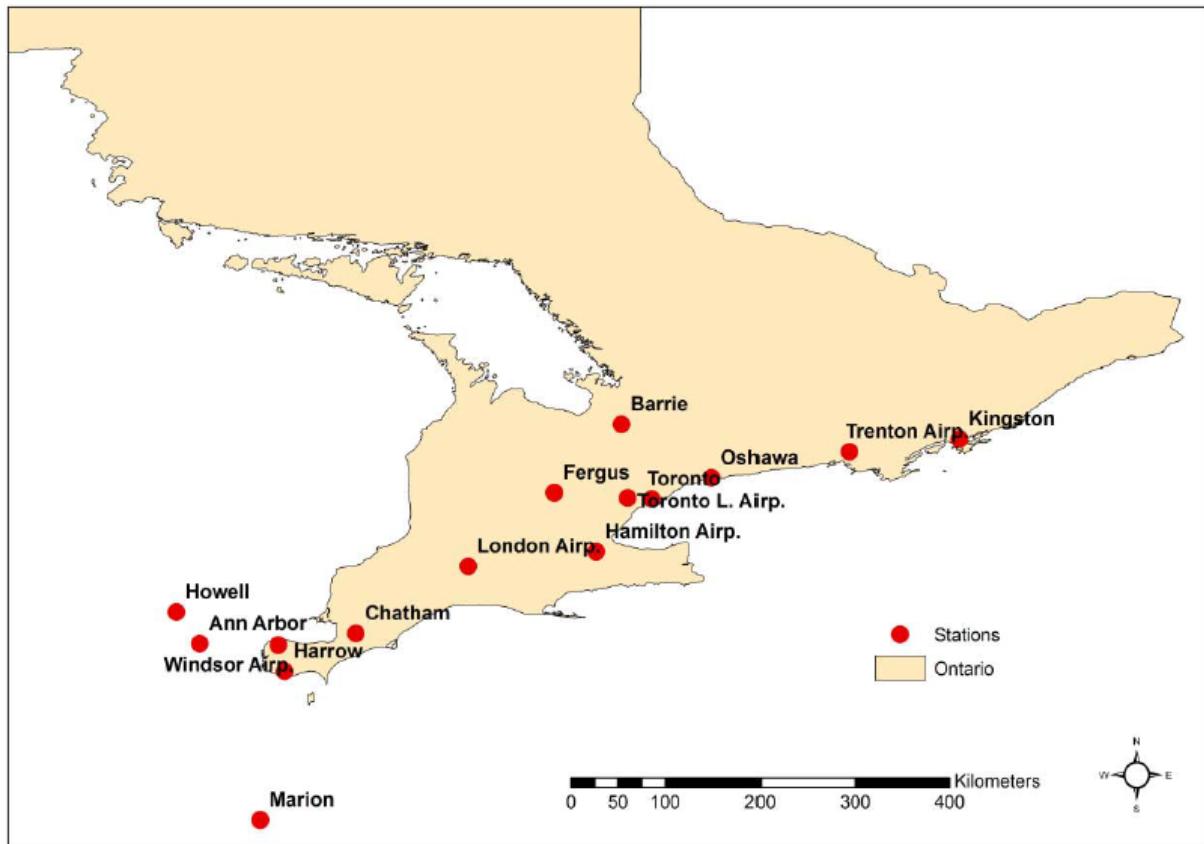


Figure 1: Location map of selected stations in Southern Ontario

### 3. METHODOLOGY & DATASETS

The following steps were undertaken to address the research questions in this study (Fig. 2):

1. Identify and review emerging techniques from the last 10 years to determine the most robust approaches for developing future IDF statistics for the selected sites (including climate model datasets, downscaling and bias-correction methods, IDF statistic and curve derivation).
2. Adapt and apply a set of the most robust approaches to multiple stations in the Toronto and Essex region (see Fig. 2 for details of datasets and methods used); and
3. Use statistical and graphical methods to compare the datasets produced from the various approaches to elucidate trends and characterize uncertainty.

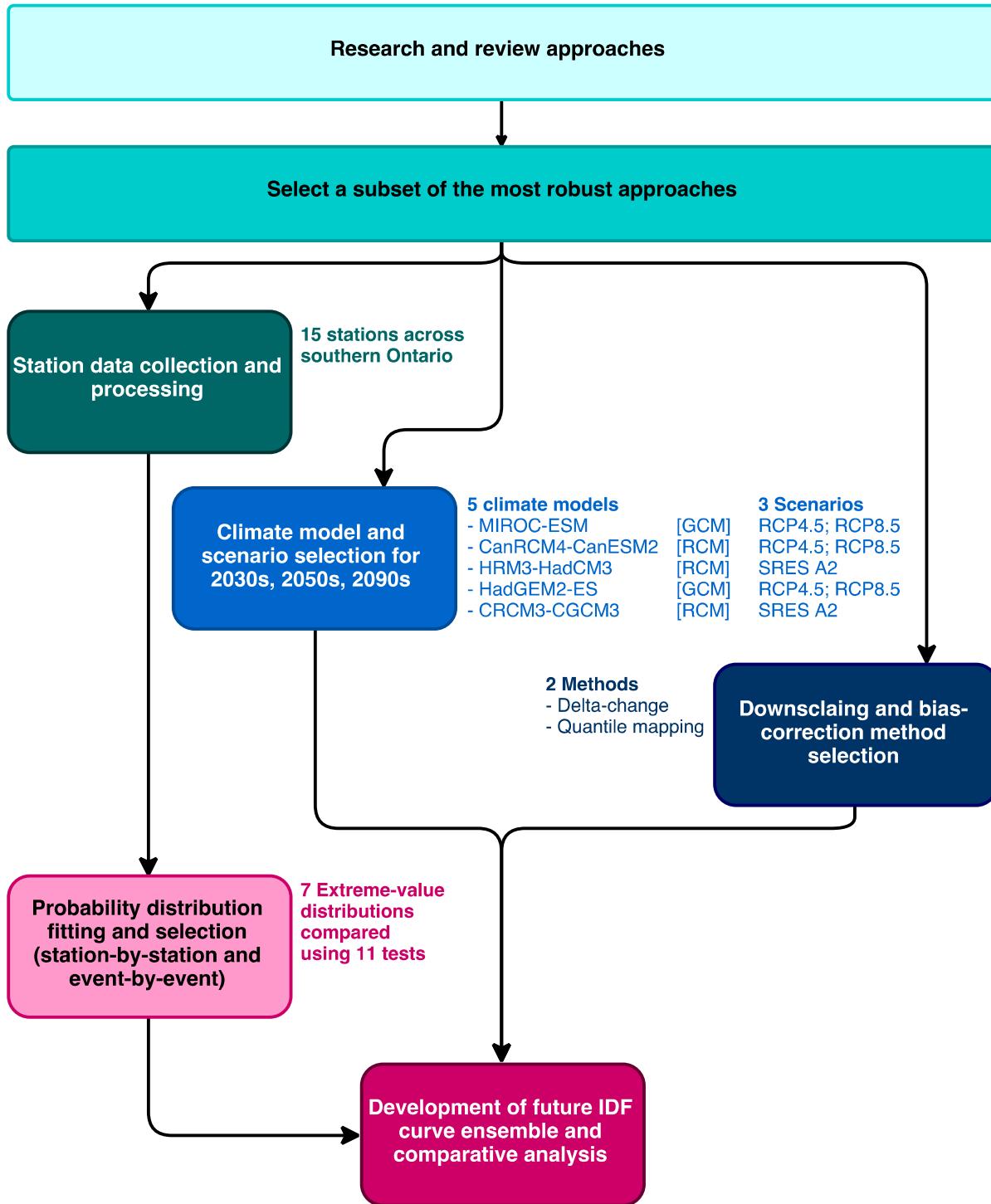


Fig. 2: Summary of overall study methodology

## 4. STUDY FINDINGS & INTERPRETATION

The following represent the most relevant findings for water managers, based on the comparative analysis among the ensemble of future IDF statistics generated:

- There is significant variability among future IDF statistics, which is manifested in a large range of intensity values for each storm durations and return period.
- In some cases, particularly in the GTA, the future IDF statistics show increases and decreases in rainfall intensity values. For instance, the relative change in intensity for the 30-minute, 100-year return-period event for the 2090s at Pearson Airport station ranged from +127% to -25% compared to the baseline period. The range in relative change for 2-hour event for 10- and 100-year return period events is shown in Fig. 3 and illustrates a similar pattern of large intensity ranges for the 2090s, especially at Pearson Airport.
- In general, variability among projections is greater for more extreme storms (e.g., 100-year vs. 10-year). This pattern can be seen in Figure 3, with the exception of the 10-year return period event for Windsor Airport station for the 2030s and 2050s. In Figure 3, a relative change of 0% would represent no change from the historical baseline storm intensity modeled with the Gumbel distribution.
- Based on the comparison of distribution functions, the GEV function was the most robust. While the Gumbel function may have been appropriate in the past, results of this study suggest the need to continually re-evaluate the suitability of existing methods, such as the distribution function, in IDF statistics updating. The fit of different probability distribution functions to extreme rainfall data is station-specific and is influenced by data quality.
- Variability among future IDF statistics due to climate model projections is generally greater than that associated with geographic variability among stations. More of the variability is due to the climate model projections than geographic differences within each study area.
- There is no definitive trend with respect to variability among projections with regard to storm duration (i.e., projections related to shorter storms are not necessarily more uncertain than longer-duration storms).

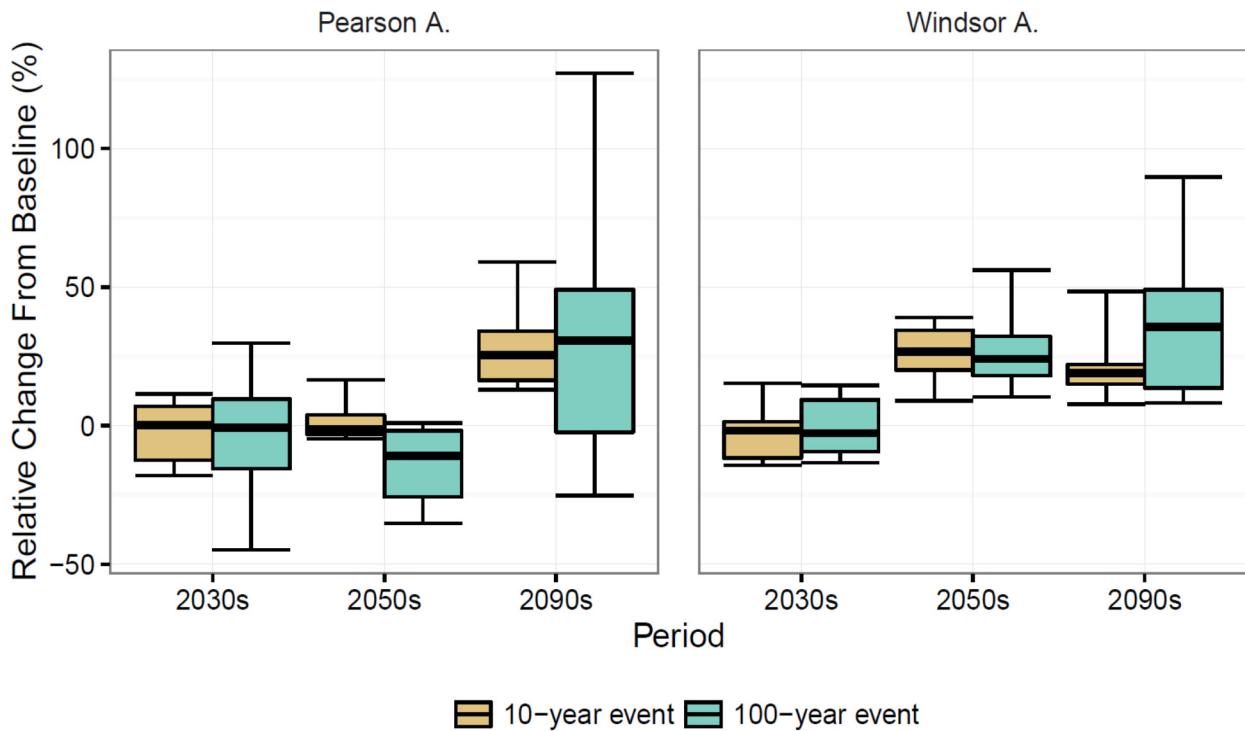


Fig. 3: Comparison of the range in relative change in rainfall intensity from baseline for the 2-hour event for 10- and 100-year return periods (0% on y-axis is no-change from historical baseline). Shaded boxes represent the inter-quartile range (25<sup>th</sup> to 75<sup>th</sup> percentile), the horizontal bar represents the median, and whiskers represent the minimum-maximum range for the ensemble.

#### 4.1. Implications for Water Managers

Based on the findings of this study, it appears that no single method within the permutations analyzed can be deemed the “best” approach for developing future IDF statistics. Despite developing an ensemble using a robust subset of downscaled datasets, there is still significant variability among future IDF statistics. In some cases, datasets diverge in the direction of change projected, which results in significant uncertainty for practitioners.

These findings do not, however, mean that projected changes of increased storm intensity and frequency are incorrect, but rather points to the well-documented scientific limitations associated with future extreme rainfall analysis. Among these limitations are (1) the accuracy of climate models in representing the atmospheric dynamics that produce extreme rainfall at the local scale, particularly for short-duration events; (2) the quality of historical data used as inputs into statistical

models, and (3) the assumptions within future emission scenarios, downscaling and bias-correction techniques.

The methods for deriving IDF statistics, both for historical and future periods, are based on the assumption of stationarity (i.e., extreme rainfall time series have a constant mean over time). Climate change however, challenges this assumption. This is not to suggest that future IDF statistics are not useful, but rather that practitioners should use them as one of many tools within resilient water management, and not as the only source of design information about extreme rainfall. Risk-based management approaches that inherently address uncertainty can be a viable way forward and include approaches such as scenario-testing, sensitivity analysis, and re-evaluating the levels of extreme rainfall hazard tolerance acceptable to decision-makers.

Additionally, the high levels of uncertainty point to a need to continually refine the extreme rainfall information used in decision making by augmenting observational data quality and coverage, regularly updating IDF statistics based on ongoing monitoring, and continually assessing the most robust climate change models, and downscaling techniques.

## 5. ABOUT IDF STATISTICS PLOTS AND DATASETS

The results of this study have been prepared as “overlays” of the IDF curve ensemble on top of historical IDF curves (Fig. 4). All plots are provided in Appendix A to this summary. There is also an output text file summarizing the numerical values and the IDF curve equations for each plot (Appendix B).

Each graph represents a unique combination of a given station, return-period and future period. Within each graph the ensemble is represented as a series of curves. Each curve reflects a specific percentile from the distribution. Since each storm-type and future period has a number of different projections, the presentation of these as percentiles from the ensemble allows for the full distribution to be represented. The following list summarizes the IDF plots:

Figure A-18: IDF Curve Comparison for Pearson Airport, 2090s 100-year Return Period Event (10th–90th Percentile)

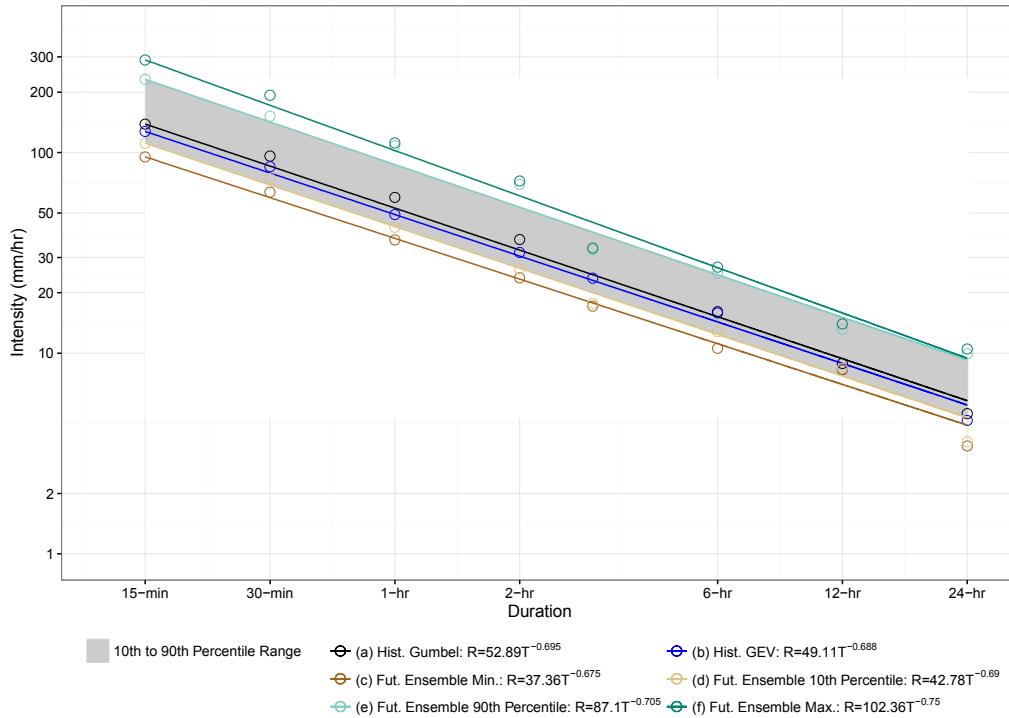


Fig. 4: Example of IDF curve overlay graph

- Future Periods:** Plots are available for three different periods (2030s, 2050s, 2090s).
- Storm Types:** Plots are available for 6 different return-periods (2-, 5-, 10-, 25-, 50-, 100-year return period events) and cover 8 storm durations (15-minute, 30-minute, 1-hour, 2-hour, 3-hour, 6-hour, 12-hour, and 24-hour events).
- Ensemble Representation:** For all periods, the ensemble statistics represented are the minimum, maximum, 10<sup>th</sup> percentile and 90<sup>th</sup> percentile values. For the 2090s, there are additional plots containing the 50<sup>th</sup> and 75<sup>th</sup> percentiles.
- Historical IDF Curves:** On all plots, this historical data are represented as two separate curves using the Gumbel and GEV distributions.
- IDF Curve Equations:** Each curve is represented by an equation listed in the legend. The curve is based on the following equation that is also implemented in Environment and Climate Change Canada's IDF curves:

$$R = aT^b$$

Where  $R$  is the rainfall intensity ( $\text{mm hr}^{-1}$ ),  $T$  is the storm duration (hr), and  $a$  and  $b$  are coefficients estimated using a least squares method implemented using a weighted version of the nonlinear least squares “nls” function in the computer program R.

## 5.1. Notable Limitations

The following represent the main limitations within the IDF statistics that should be considered by all users:

- **Limited ensemble:** The ensemble represented on each graph is a limited subset of the potential climate change scenarios for each study area. There are conceivably a very large number of potential climate future projections that could be derived, considering the number of climate models, downscaling methods and scenarios available. In this study, only five different climate models, two statistical bias-correction methods, and three emission scenarios are considered for future periods. While the models selected are deemed robust for the southern Ontario region, they are still only a subset of all models available. As such, the full variability and uncertainty are likely not captured within this dataset.
- **Different models for different periods:** Not all climate models had output for all future periods, and as such the size of the ensemble and models represented varies as is summarized in Table 1 below. Additionally, there is slight difference in the definition of the 2050s future period, however, this does not affect the results in any significant manner.
- **Curve fit:** It is evident in some plots that the IDF curves do not perfectly fit the point data. This is because there are some outliers within the dataset that make curve fitting a challenge. The accompanying text file contains information on the curve-fitting error in the form of the “standard error”. The standard error for the entire dataset ranges between 1% and 5% and averages 2% which is an acceptable error term in this context.

**Table 1: Future Period Ensemble Composition**

Future Period	No. Ensemble Members	Models and Scenarios
2030s	12	MIROC-ESM (RCP4.5, RCP8.5), HadGEM2-ES (RCP4.5, RCP8.5), CanRCM4-CanESM2 (RCP4.5, RCP8.5)
2050s	8	HRM3-HadCM3 (SRES A2), CRCM3-CGCM3 (SRES A2), CanRCM4-CanESM2 (RCP4.5, RCP8.5)
2090s	12	MIROC-ESM (RCP4.5, RCP8.5), HadGEM2-ES (RCP4.5, RCP8.5), CanRCM4-CanESM2 (RCP4.5, RCP8.5),

## NOTES:

<sup>1</sup> See the following: MOE, “Stormwater Management Planning and Design Manual” (Toronto, ON, 2003); MTO, “Drainage Management Manual,” 1997; TRCA, “Stormwater Management Criteria” (Toronto, ON, 2012); City of Mississauga, “Subdevision Requirements Section 2 Design Requirements” (Mississauga, ON, 2009).

<sup>2</sup> Environment Canada’s IDF curves are available online at the following URL and are updated periodically: [ftp://ftp.tor.ec.gc.ca/Pub/Engineering\\_Climate\\_Dataset/IDF/](ftp://ftp.tor.ec.gc.ca/Pub/Engineering_Climate_Dataset/IDF/). At the time of this report, the curves were updated to 2013 rainfall data.

<sup>3</sup> For example, see: J. Zhu, “Impact of Climate Change on Extreme Rainfall across the United States,” *Journal of Hydrologic Engineering* 18, no. 10 (2013): 1301–9; O. Seidou, A. Ramsay and I. Nistor, “Climate Change Impacts on Extreme Floods I: Combining Imperfect Deterministic Simulations and Non-Stationary Frequency Analysis,” *Natural Hazards* 61, no. 2 (2012): 647–59; S. Westra et al., “Future Changes to the Intensity and Frequency of Short-Duration Extreme Rainfall,” *Reviews of Geophysics*, September (2014), doi:10.1002/2014RG000464; C. Cheng et al., “A Synoptic Weather-Typing Approach to Project Future Daily Rainfall and Extremes at Local Scale in Ontario, Canada,” *Journal of Climate* 24, no. 14 (2011): 3667–85.

<sup>4</sup> Technical report for this project contains a full review of approaches

# **A Comparison of Future IDF Curves for Southern Ontario**

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Addendum – Appendix A: IDF Curve Overlay Plots

Figure A-1: IDF Curve Comparison for Pearson Airport, 2030s 2-year Return Period Event (10th–90th Percentile)

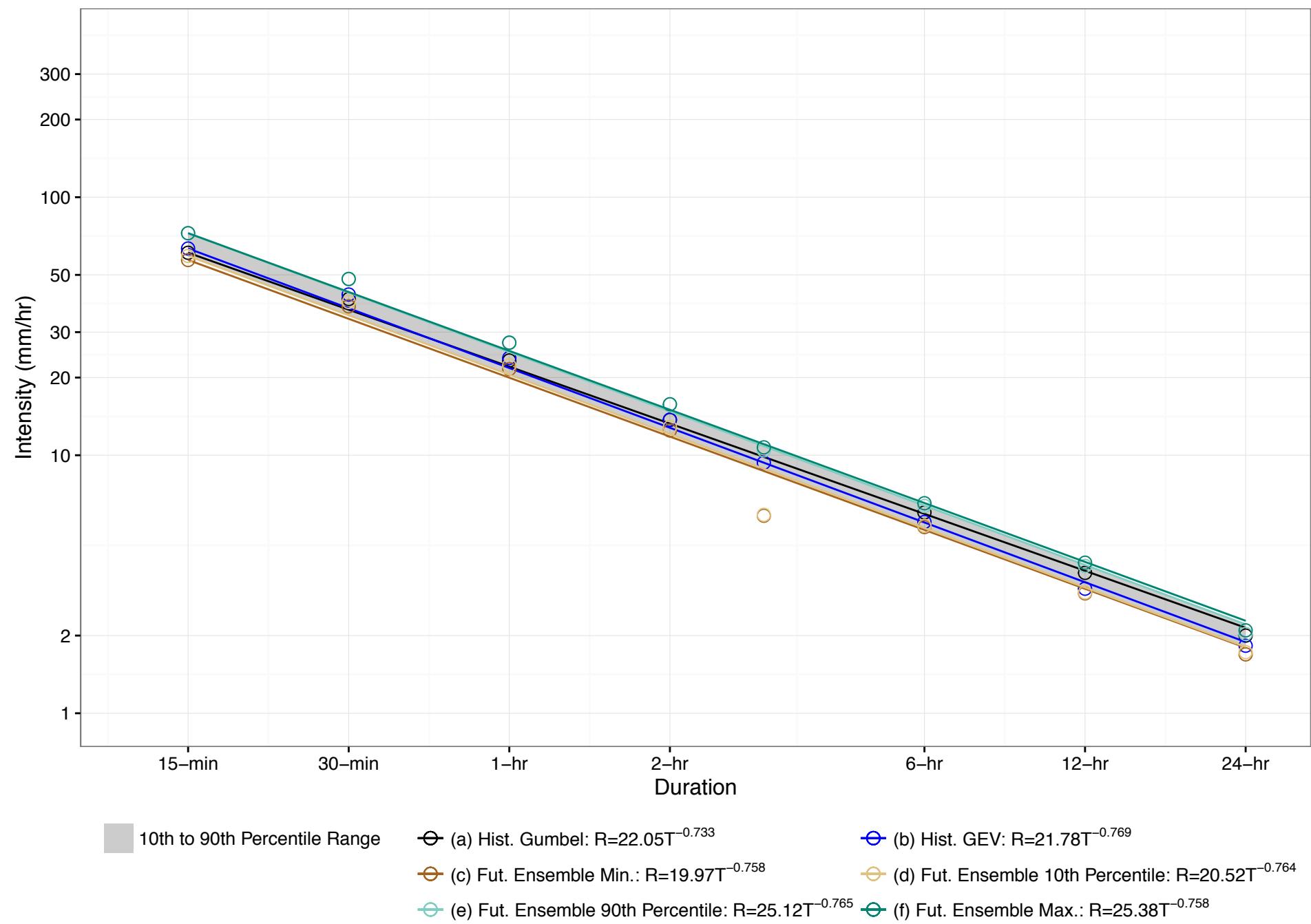


Figure A-2: IDF Curve Comparison for Pearson Airport, 2030s 5-year Return Period Event (10th–90th Percentile)

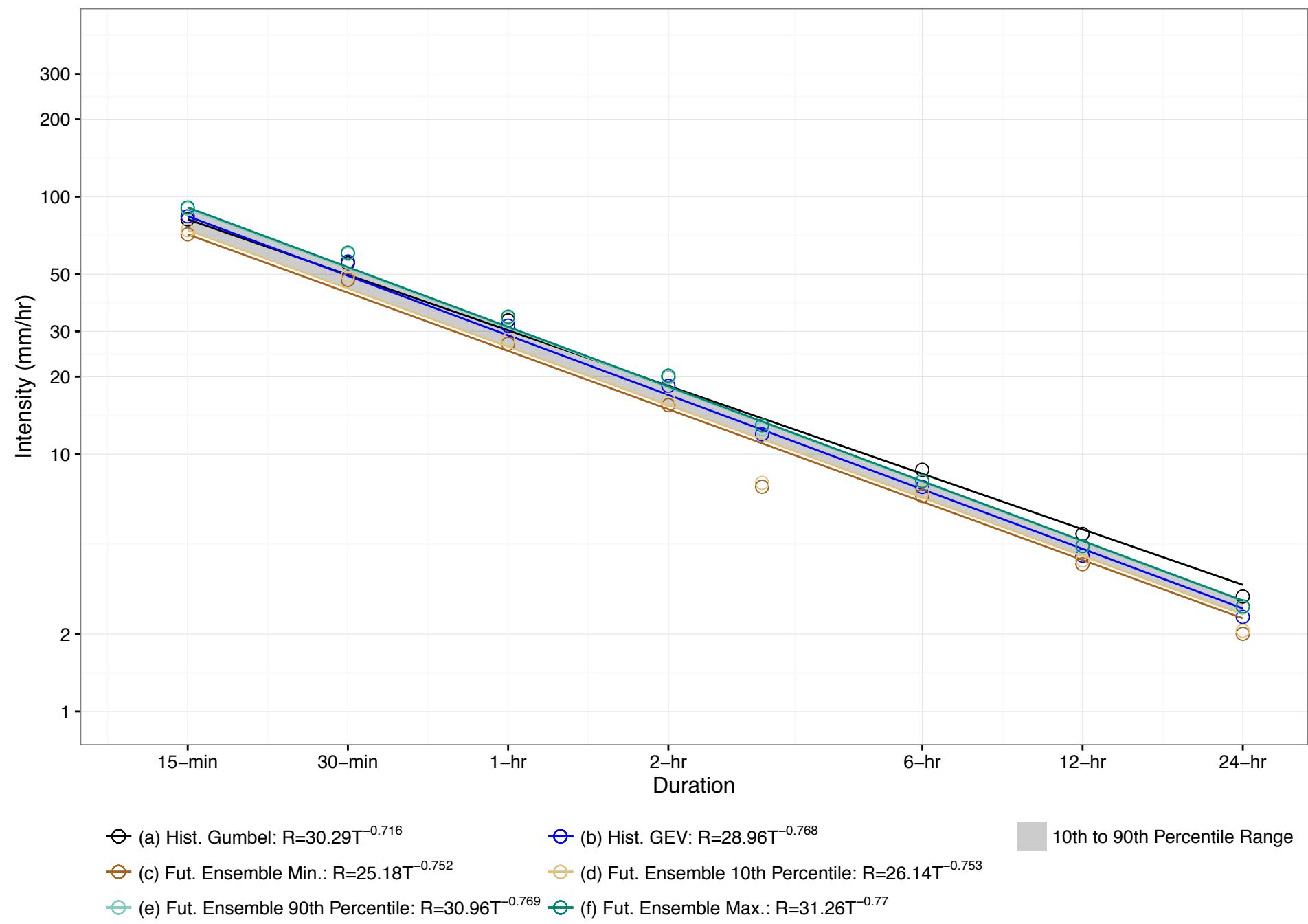


Figure A-3: IDF Curve Comparison for Pearson Airport, 2030s 10-year Return Period Event (10th–90th Percentile)

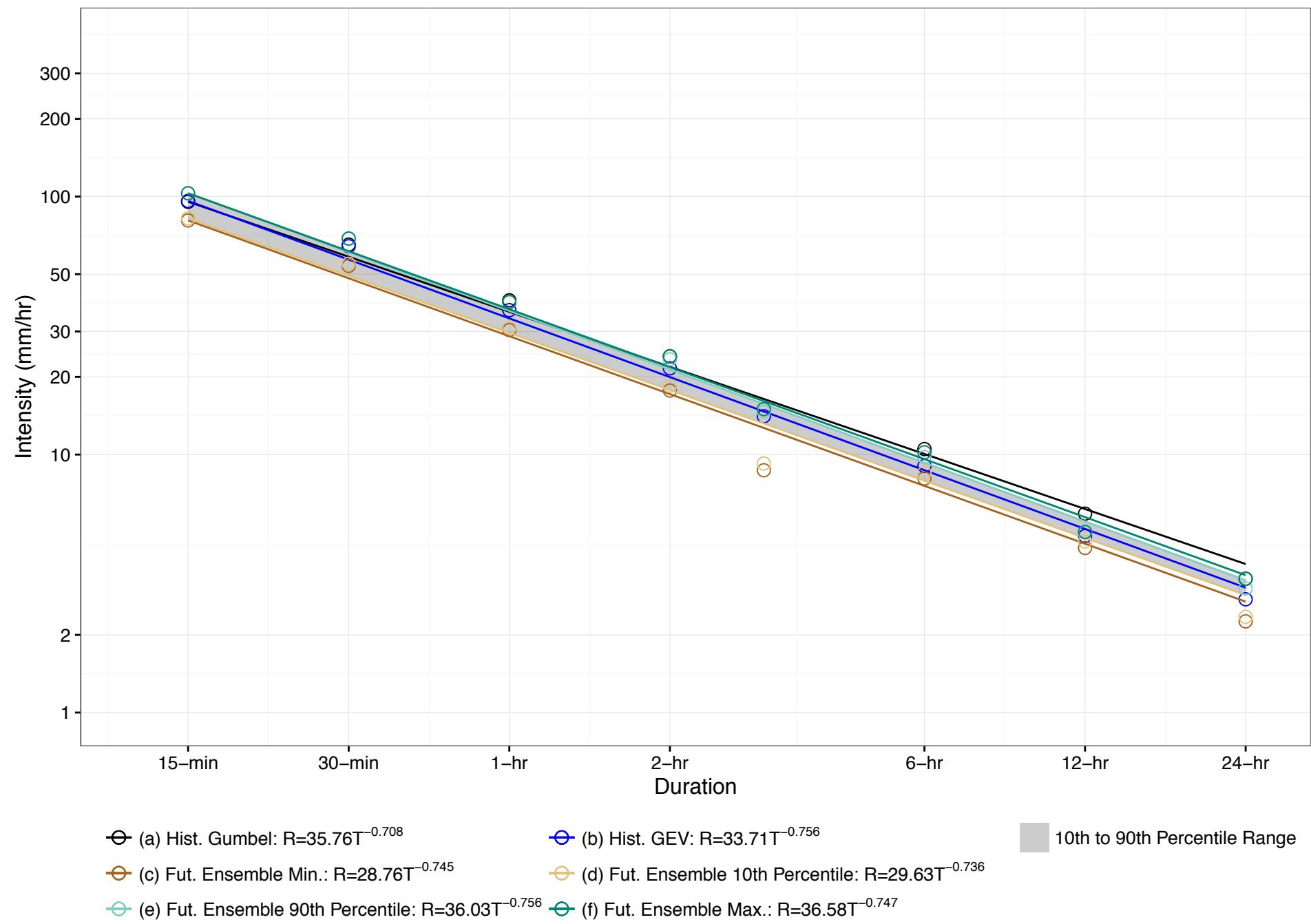


Figure A-4: IDF Curve Comparison for Pearson Airport, 2030s 25-year Return Period Event (10th–90th Percentile)

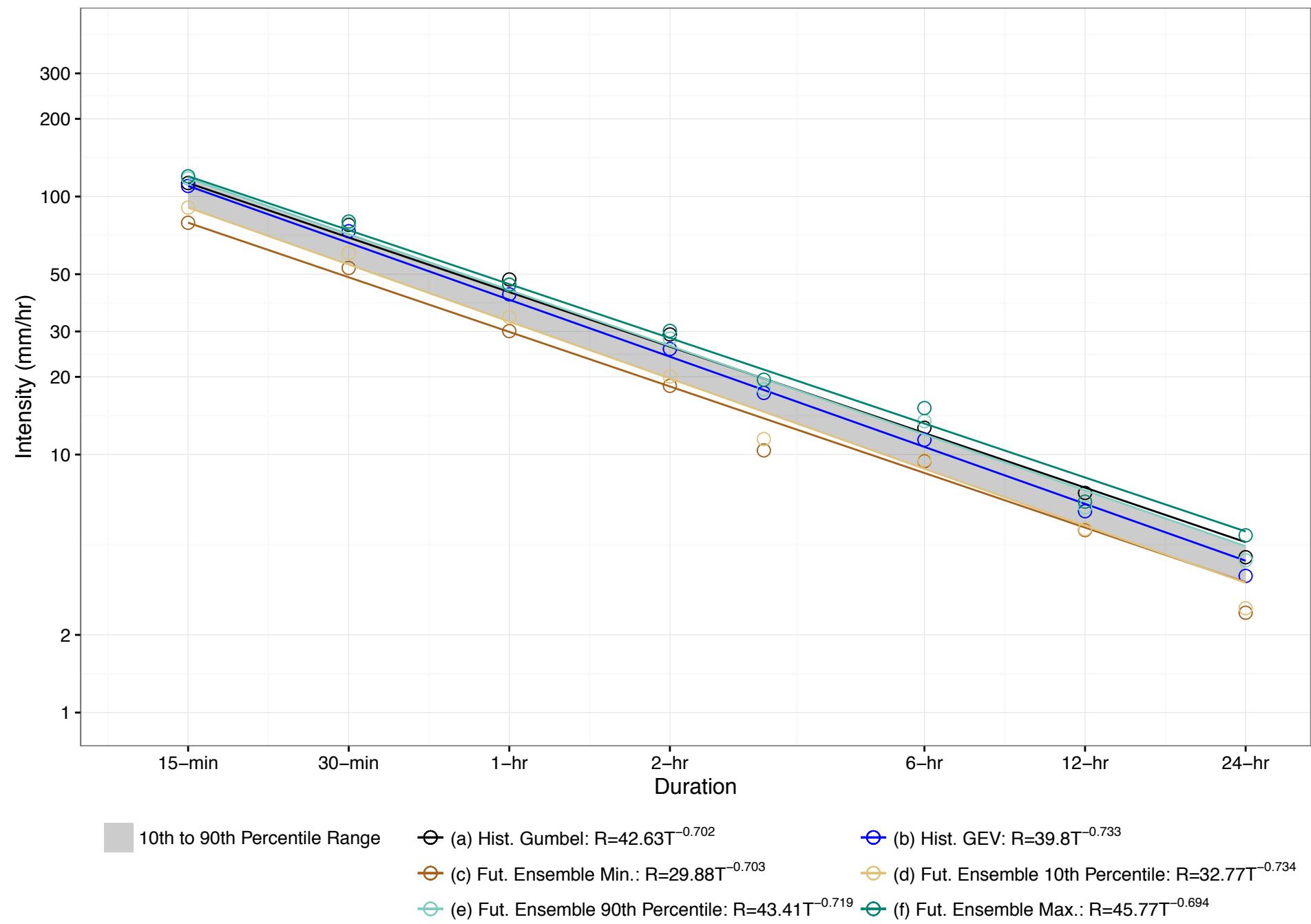


Figure A-5: IDF Curve Comparison for Pearson Airport, 2030s 50-year Return Period Event (10th–90th Percentile)

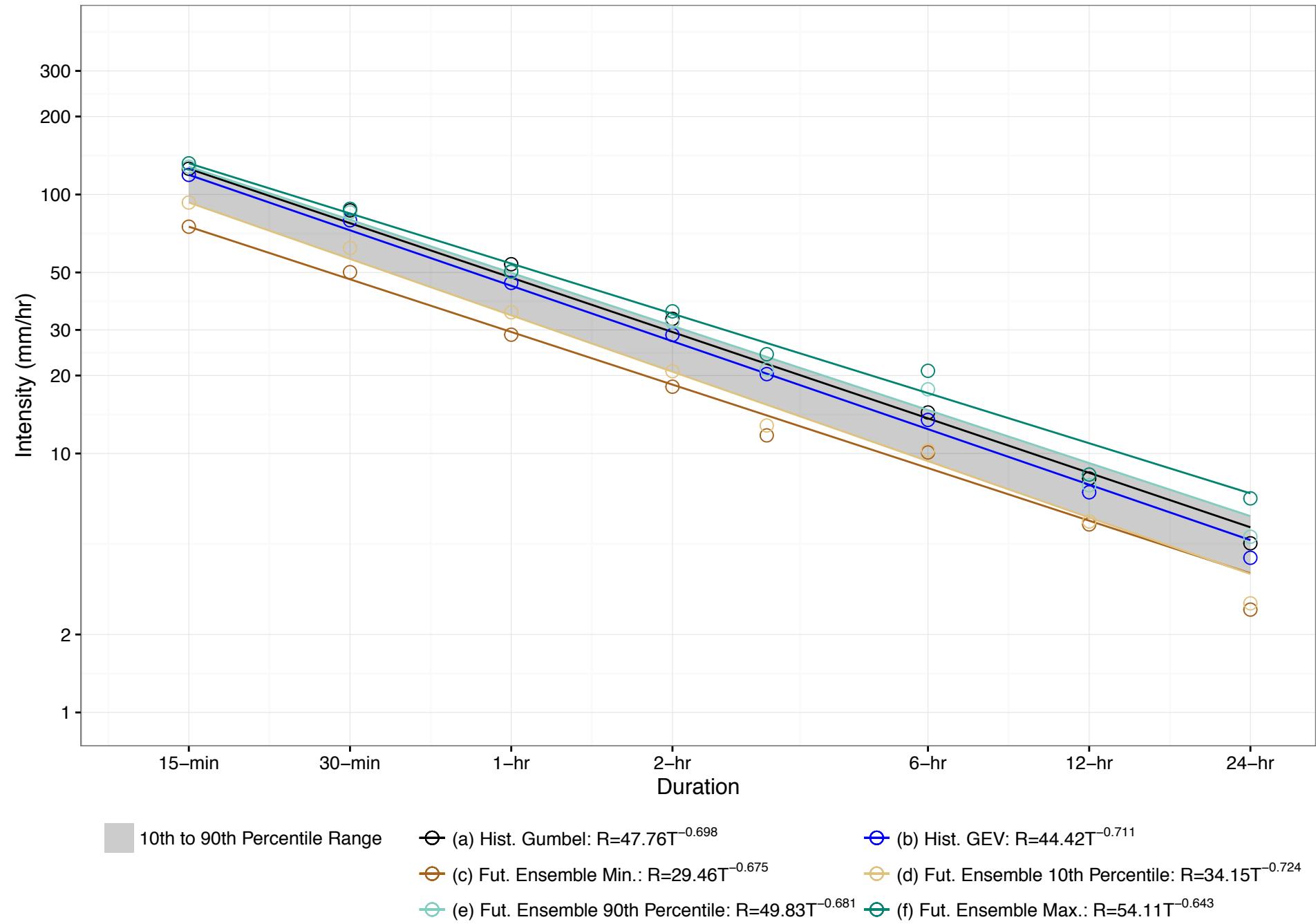


Figure A-6: IDF Curve Comparison for Pearson Airport, 2030s 100-year Return Period Event (10th–90th Percentile)

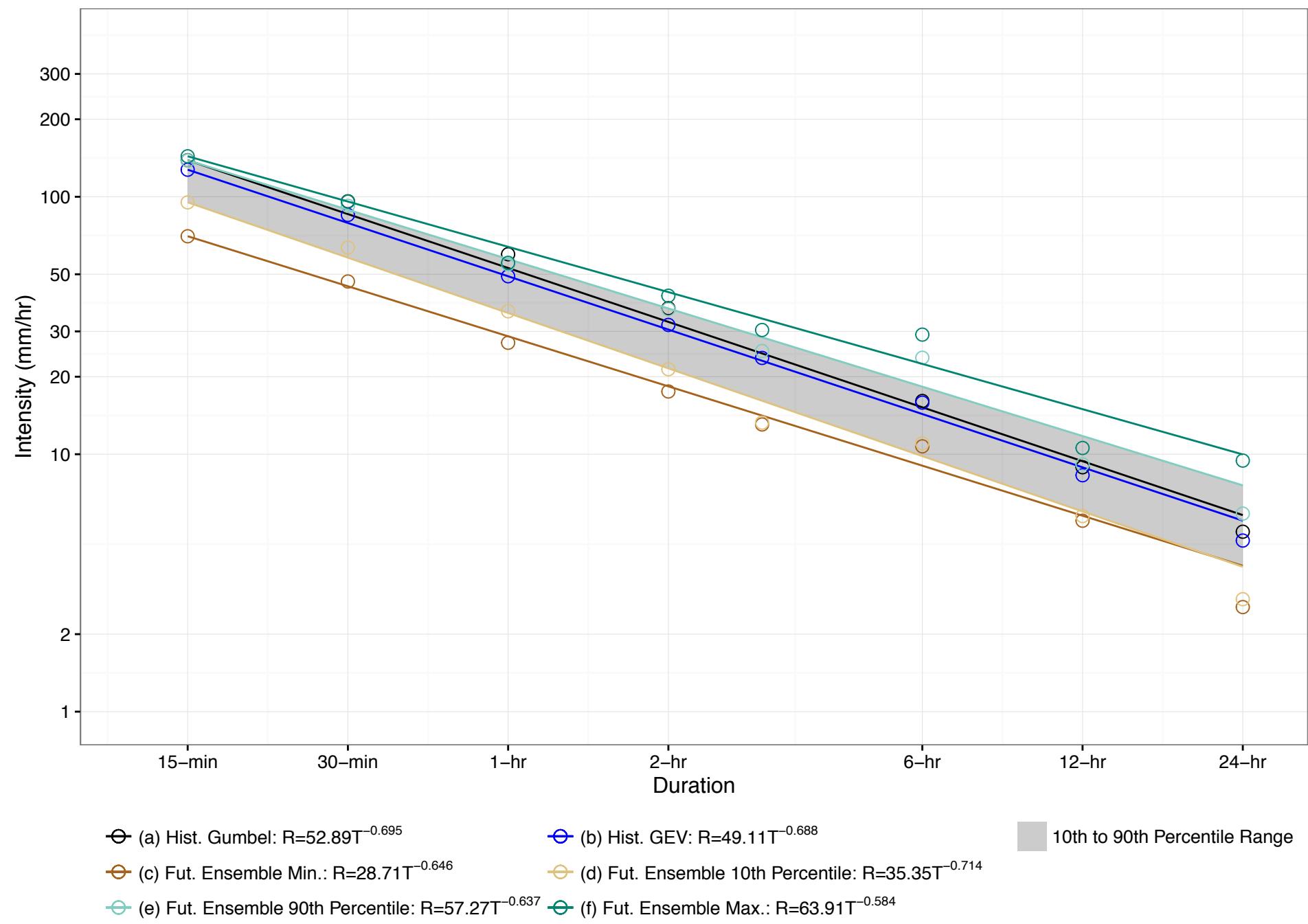


Figure A-7: IDF Curve Comparison for Pearson Airport, 2050s 2-year Return Period Event (10th–90th Percentile)

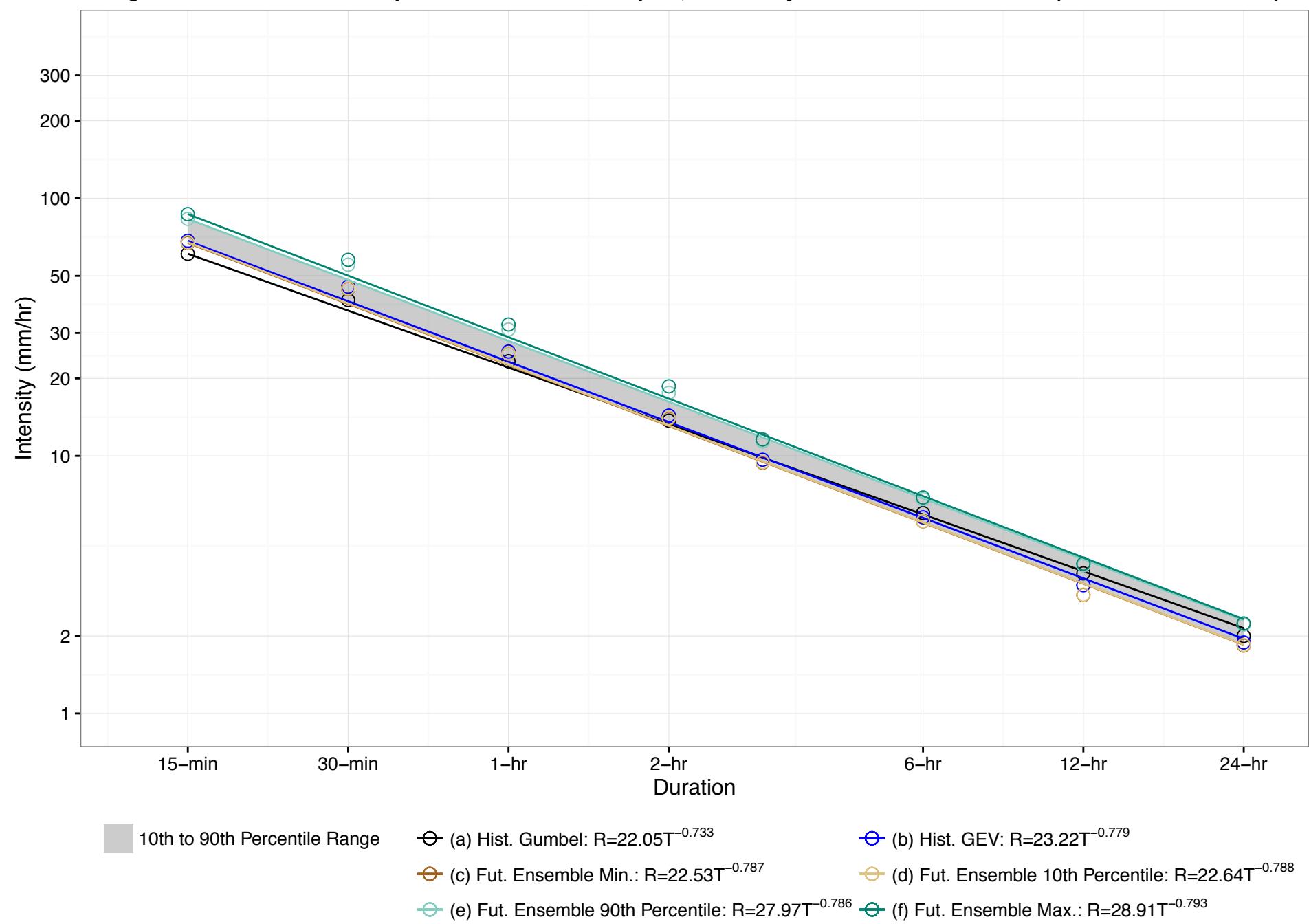


Figure A–8: IDF Curve Comparison for Pearson Airport, 2050s 5-year Return Period Event (10th–90th Percentile)

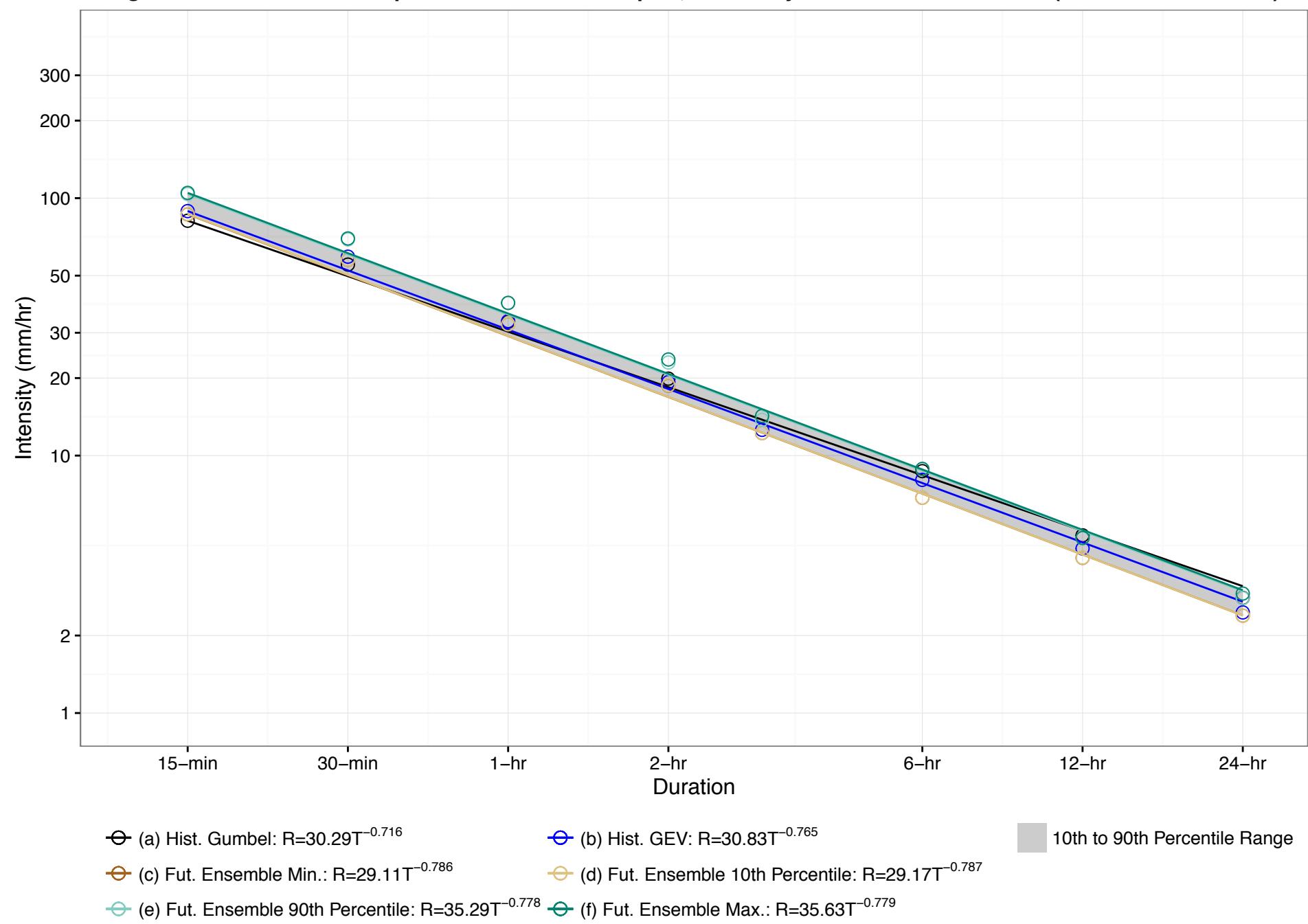


Figure A-9: IDF Curve Comparison for Pearson Airport, 2050s 10-year Return Period Event (10th–90th Percentile)

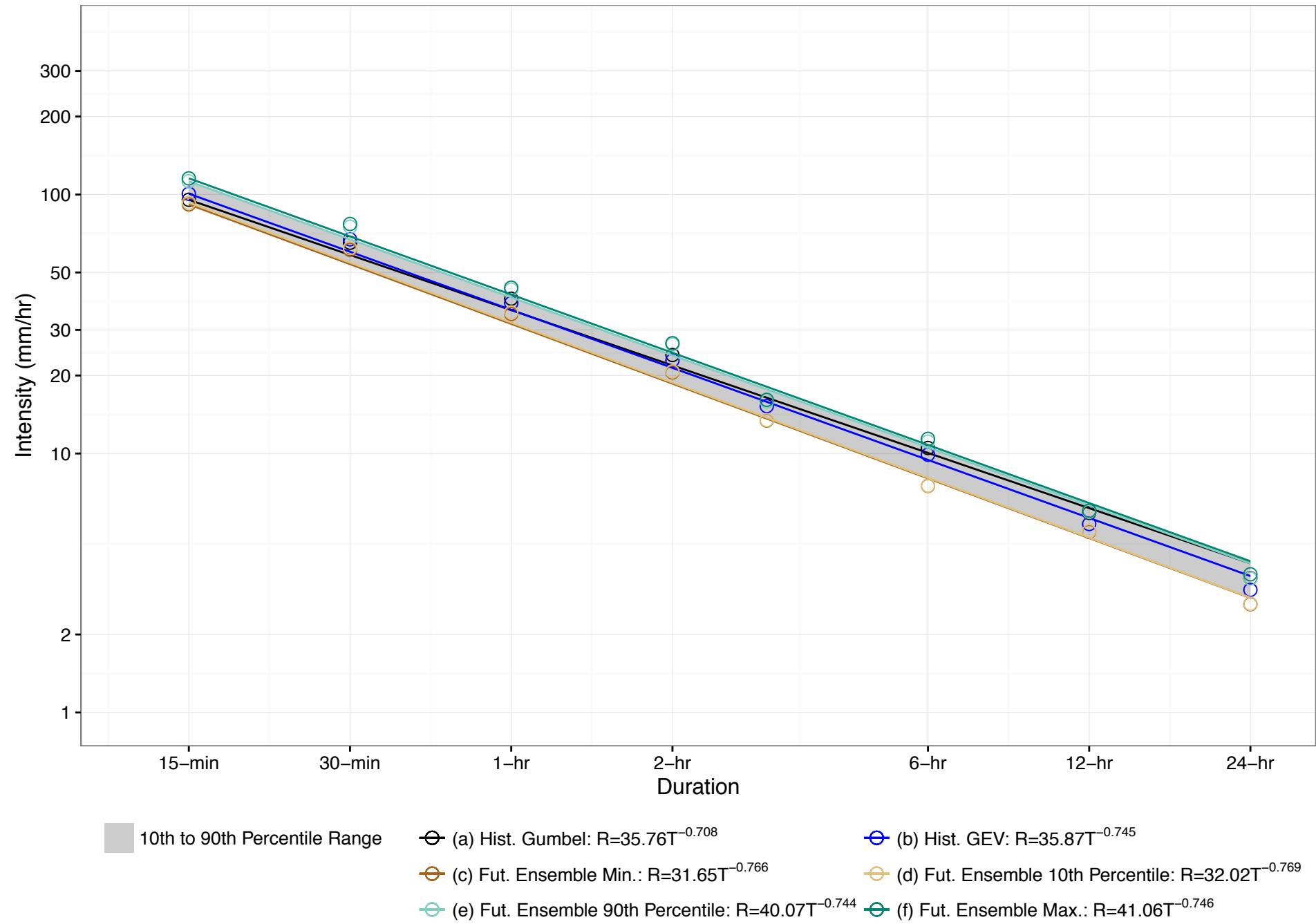


Figure A-10: IDF Curve Comparison for Pearson Airport, 2050s 25-year Return Period Event (10th–90th Percentile)

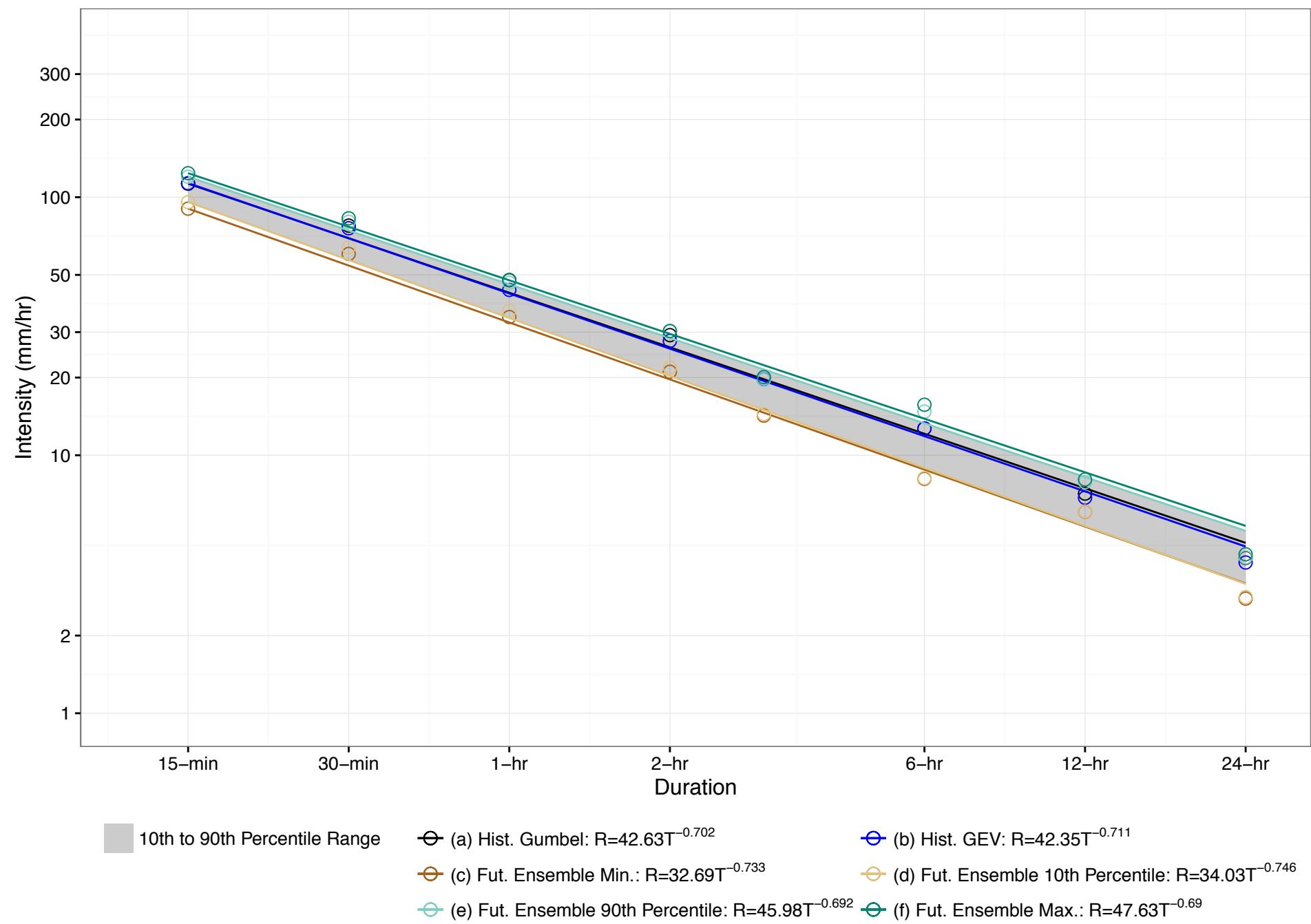


Figure A-11: IDF Curve Comparison for Pearson Airport, 2050s 50-year Return Period Event (10th–90th Percentile)

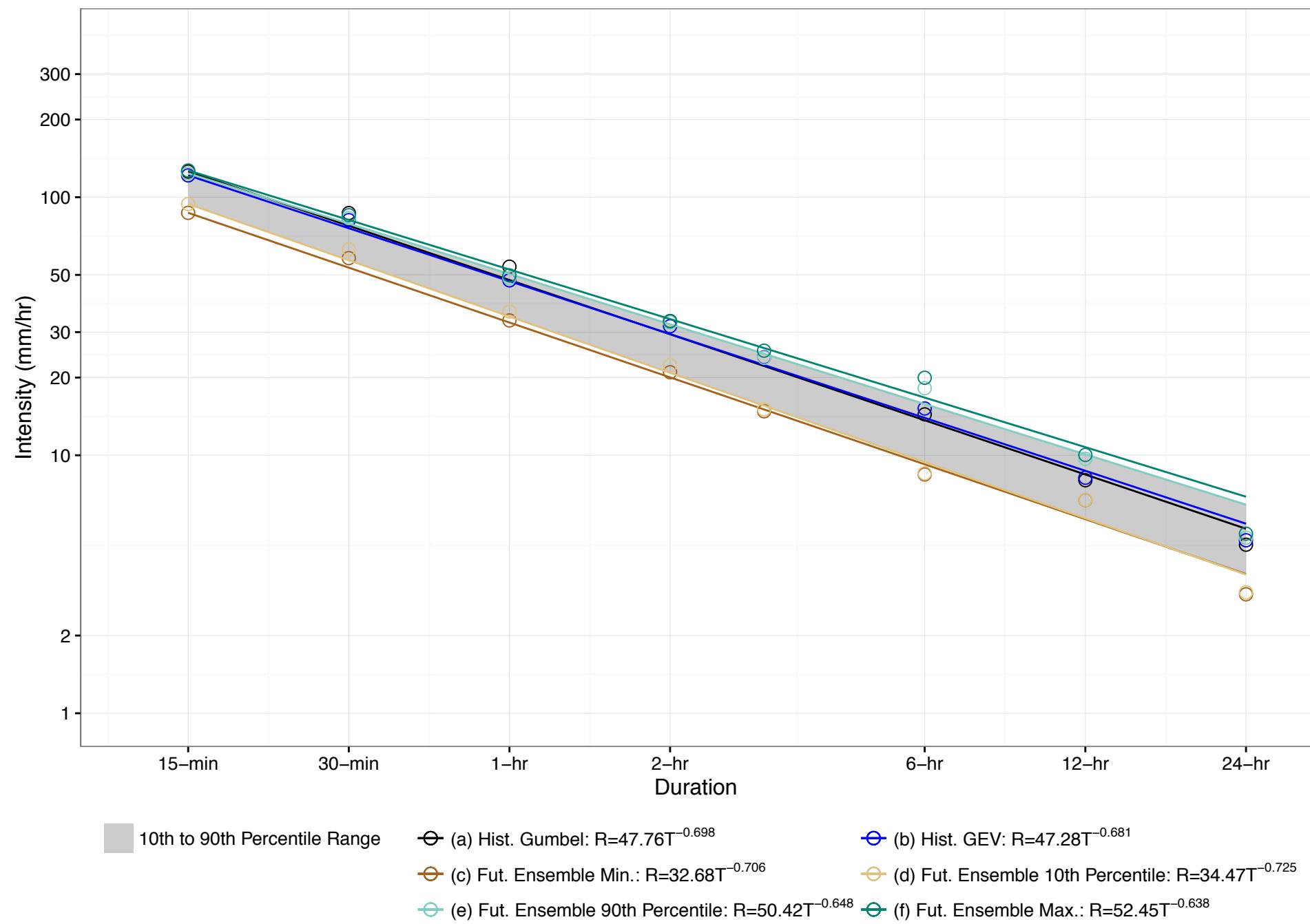


Figure A-12: IDF Curve Comparison for Pearson Airport, 2050s 100-year Return Period Event (10th–90th Percentile)

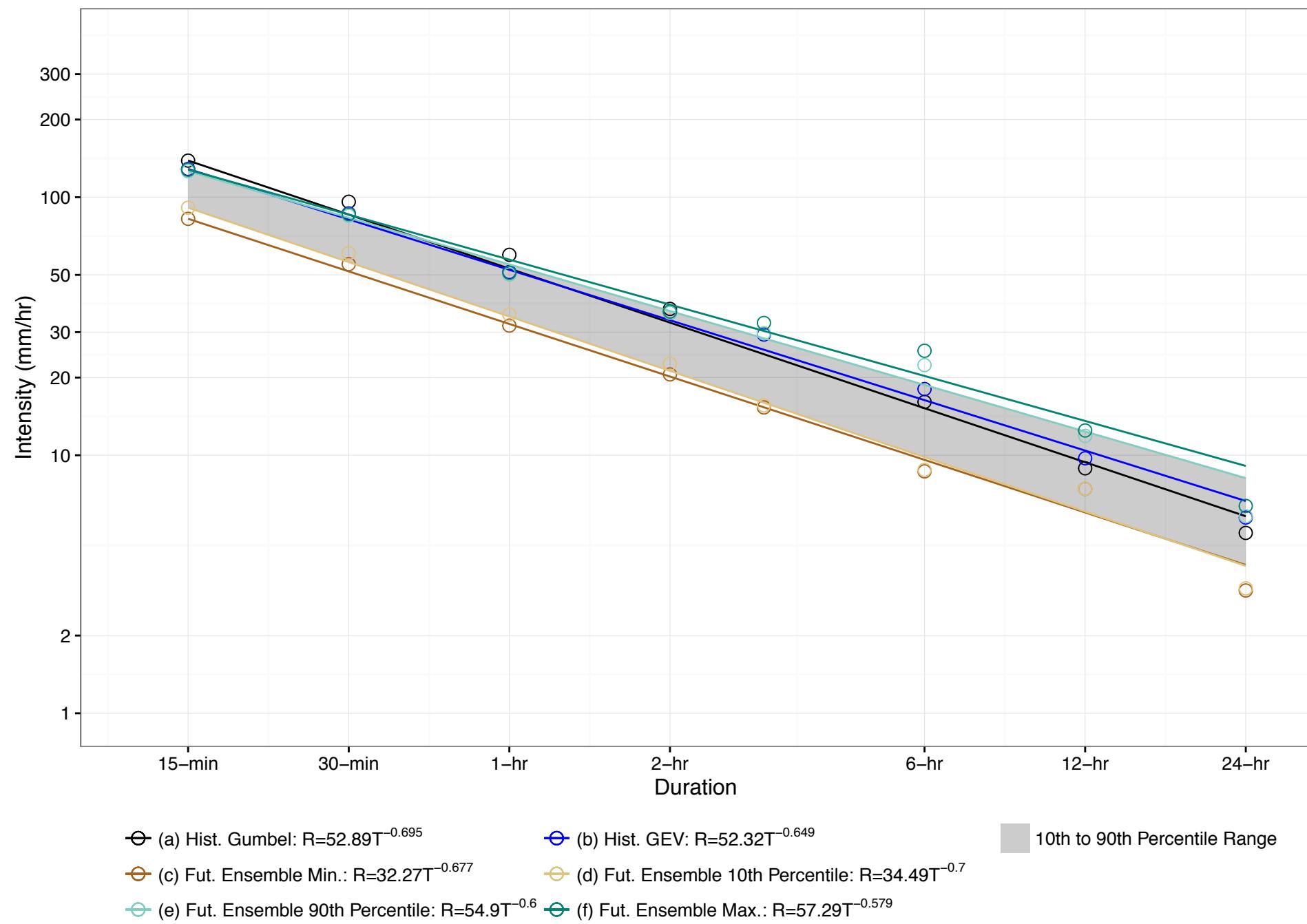


Figure A–13: IDF Curve Comparison for Pearson Airport, 2090s 2-year Return Period Event (10th–90th Percentile)

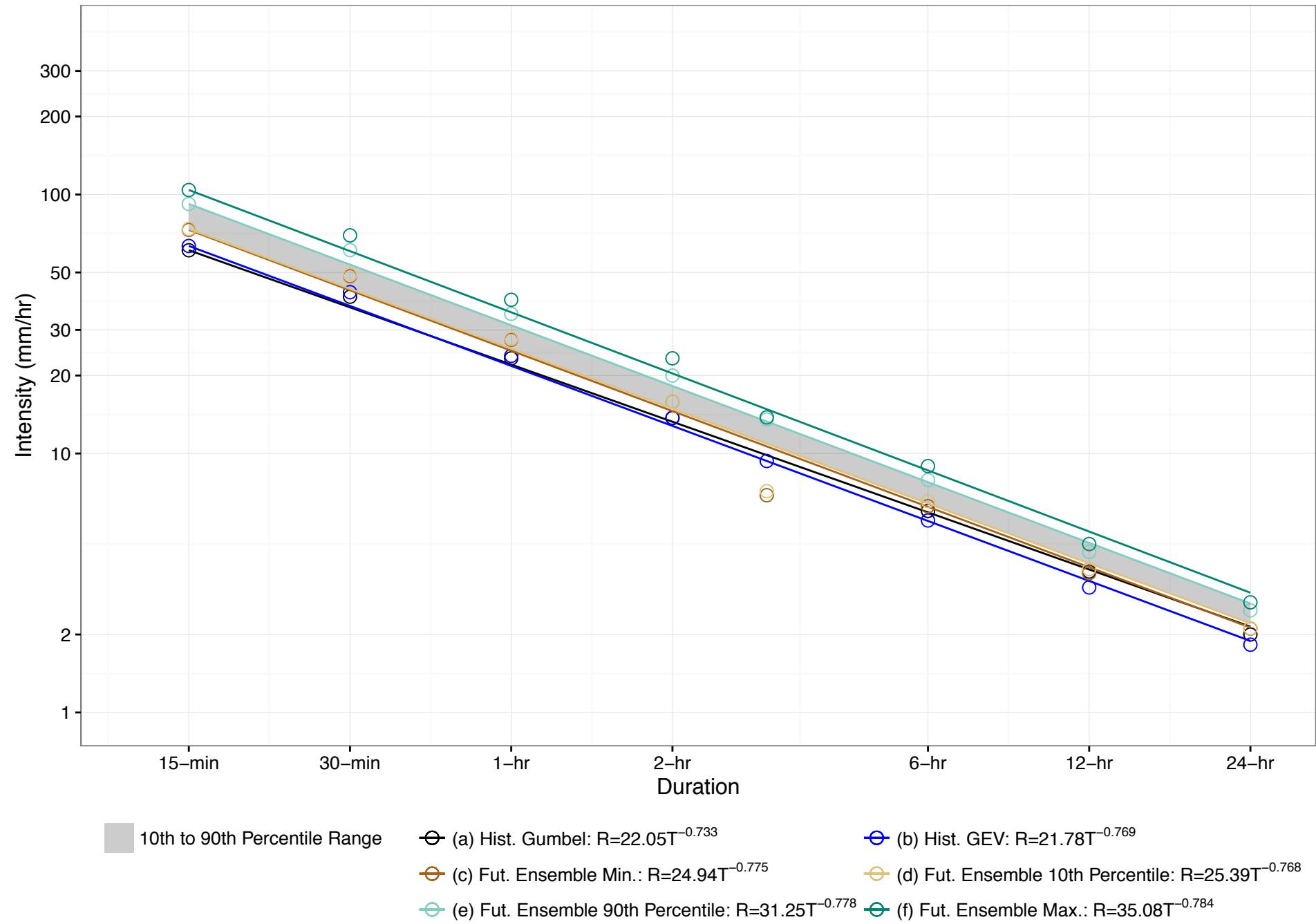


Figure A-14: IDF Curve Comparison for Pearson Airport, 2090s 5-year Return Period Event (10th–90th Percentile)

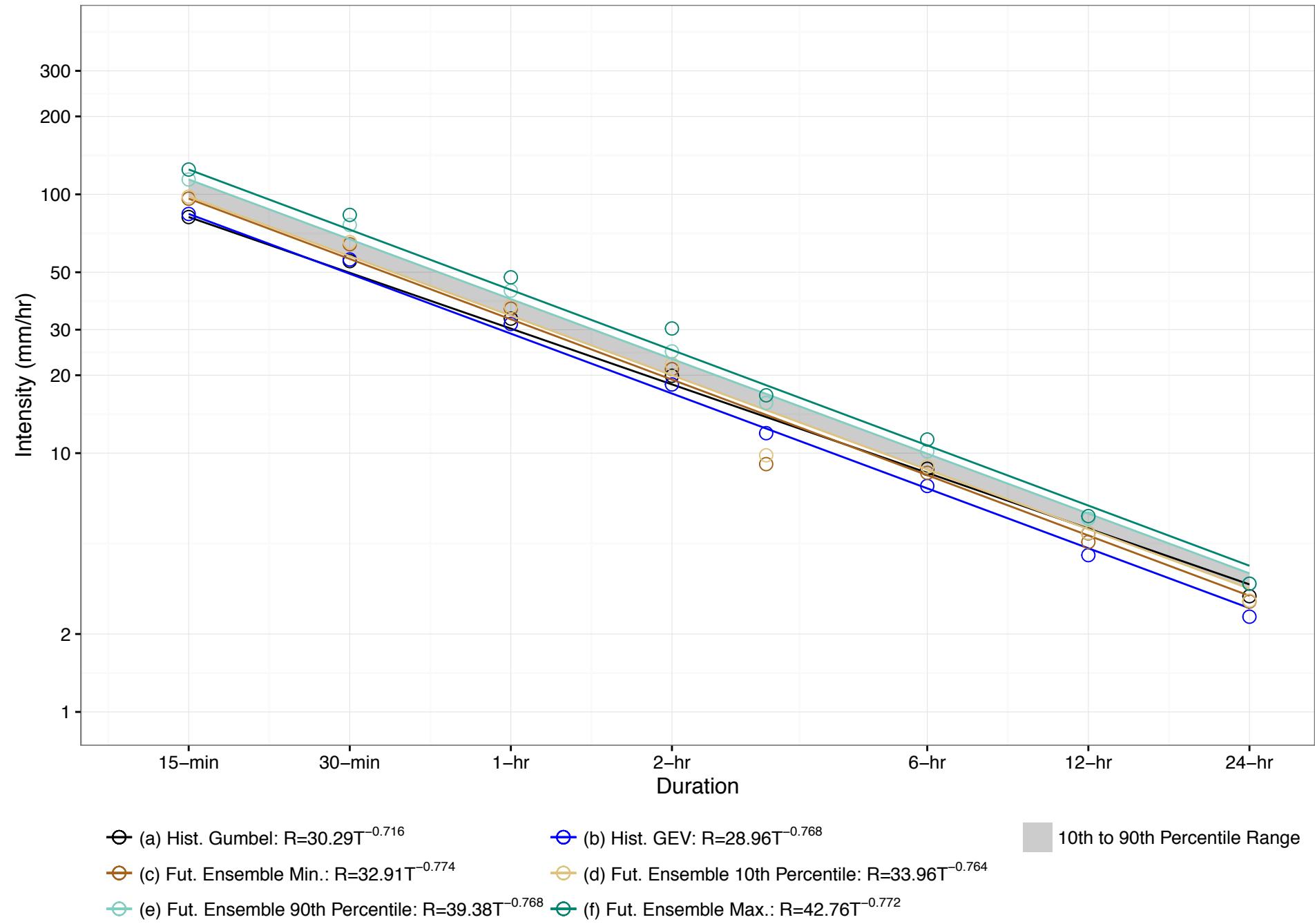


Figure A-15: IDF Curve Comparison for Pearson Airport, 2090s 10-year Return Period Event (10th–90th Percentile)

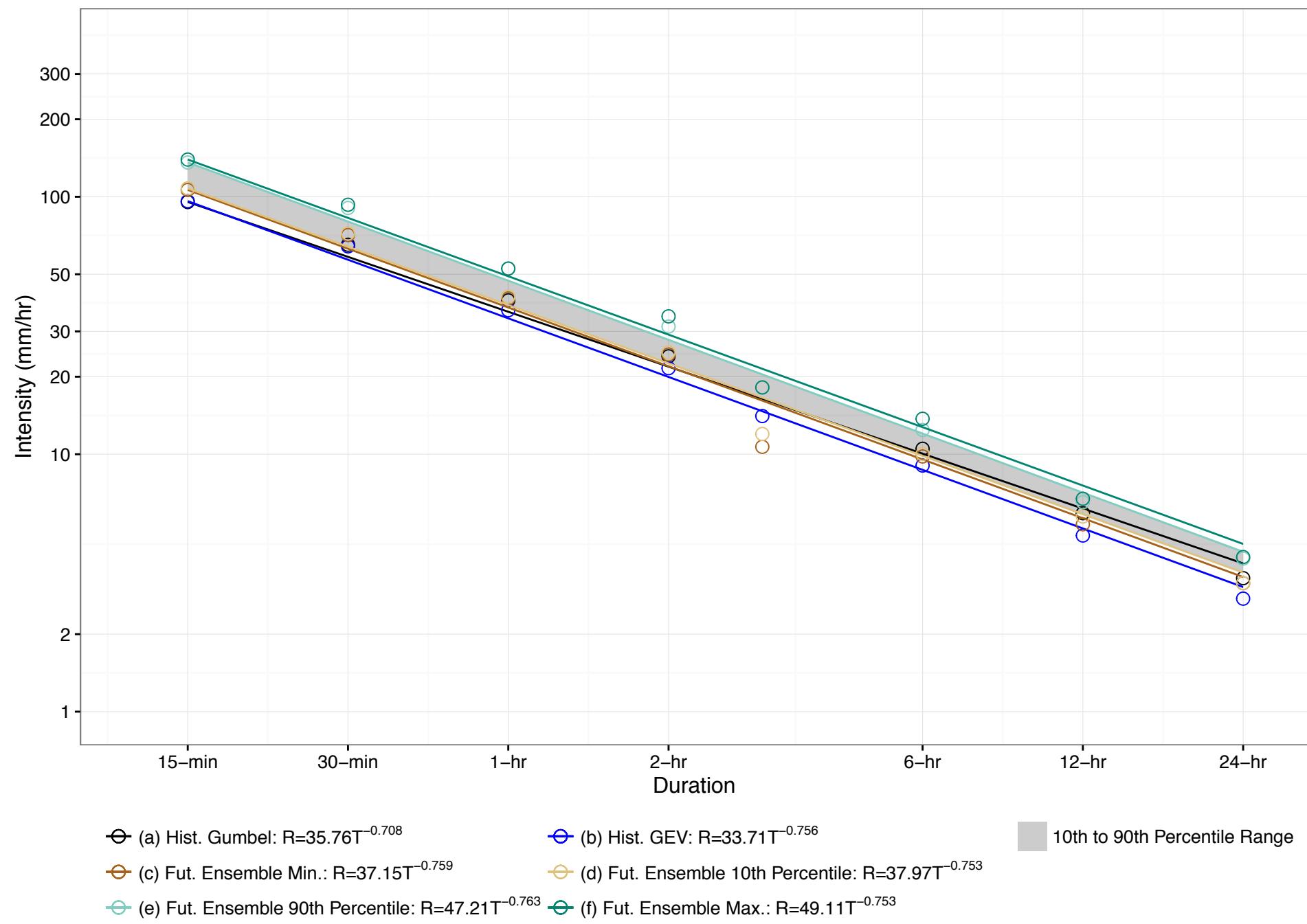


Figure A-16: IDF Curve Comparison for Pearson Airport, 2090s 25-year Return Period Event (10th–90th Percentile)

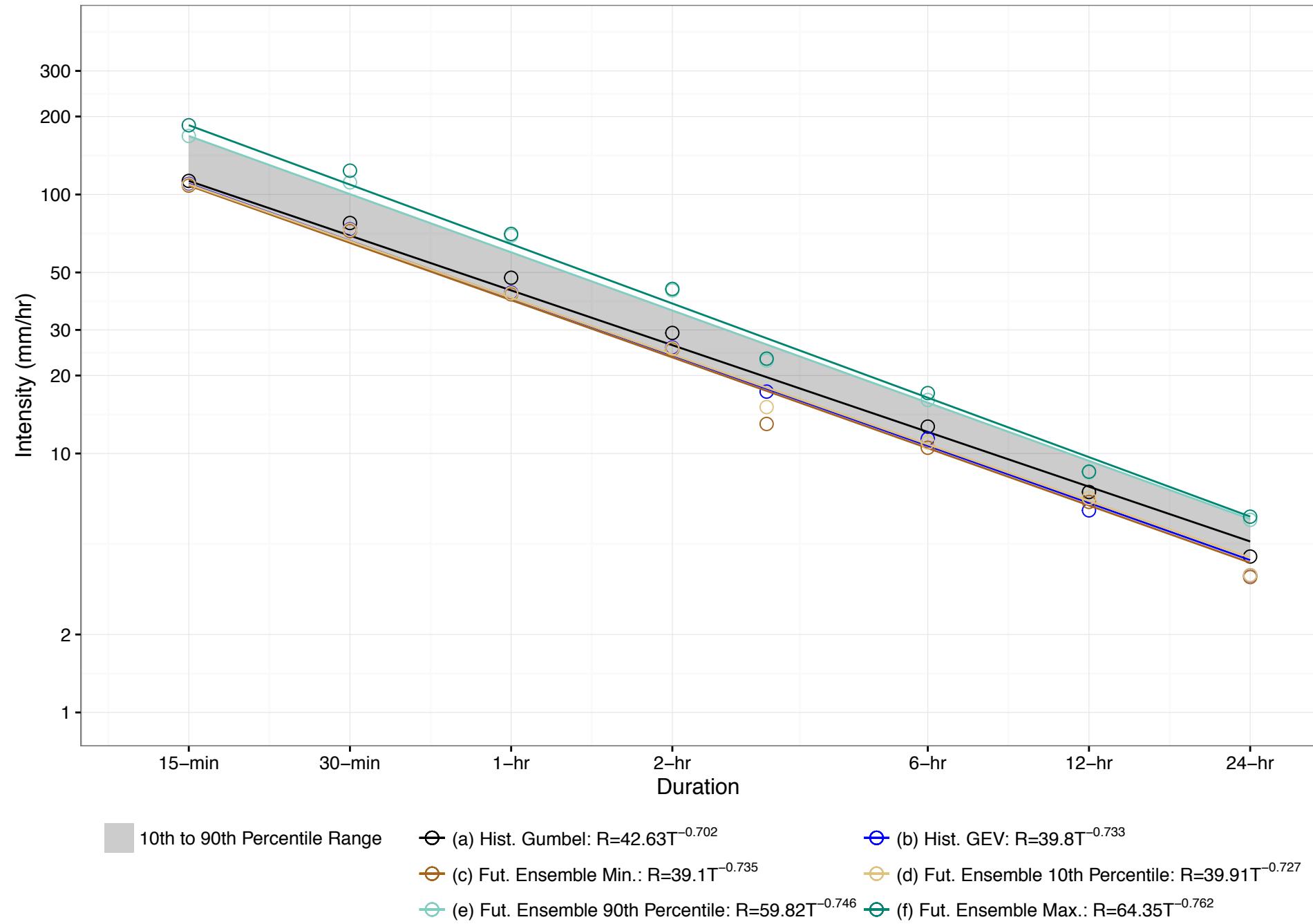


Figure A-17: IDF Curve Comparison for Pearson Airport, 2090s 50-year Return Period Event (10th–90th Percentile)

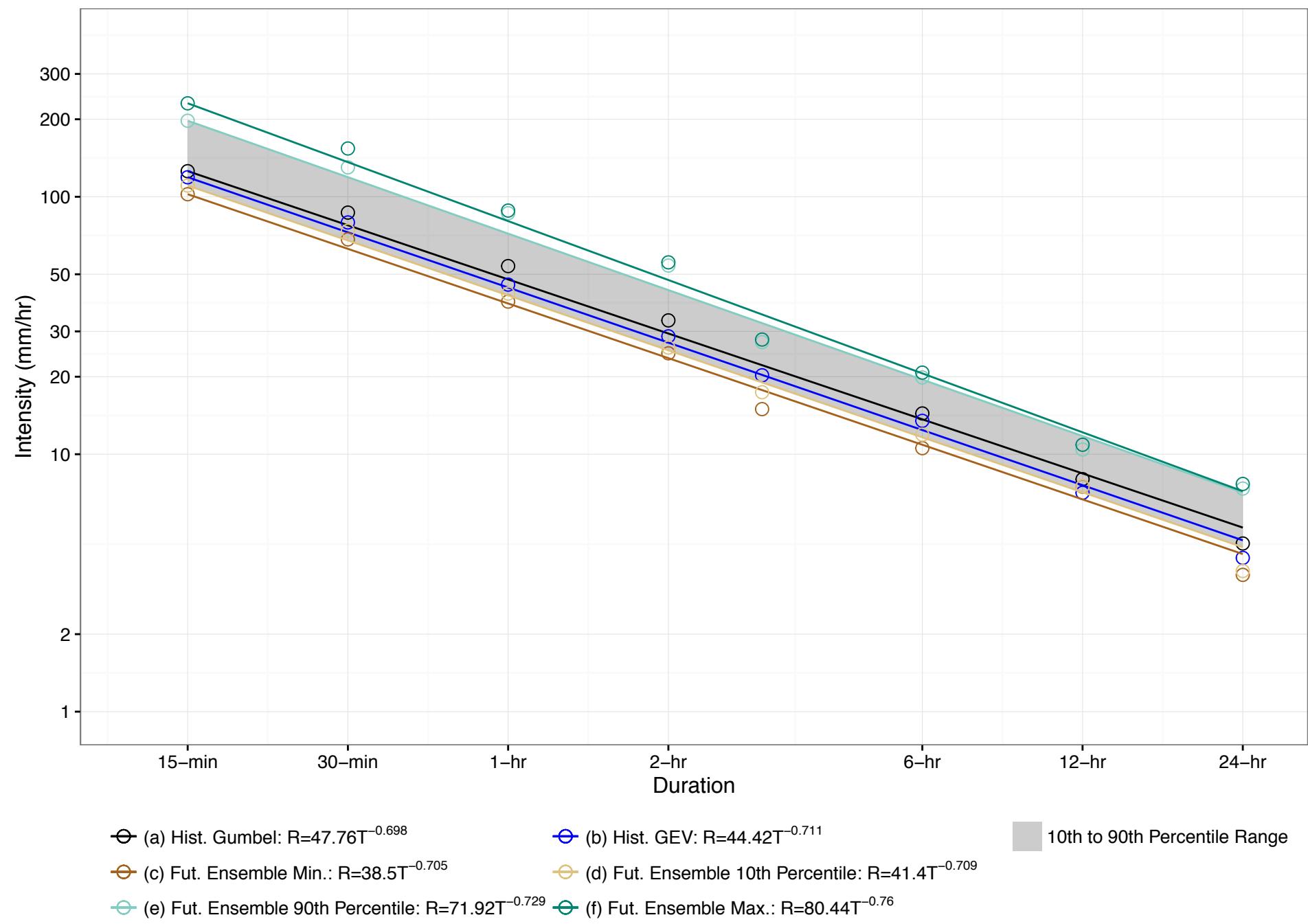


Figure A–18: IDF Curve Comparison for Pearson Airport, 2090s 100–year Return Period Event (10th–90th Percentile)

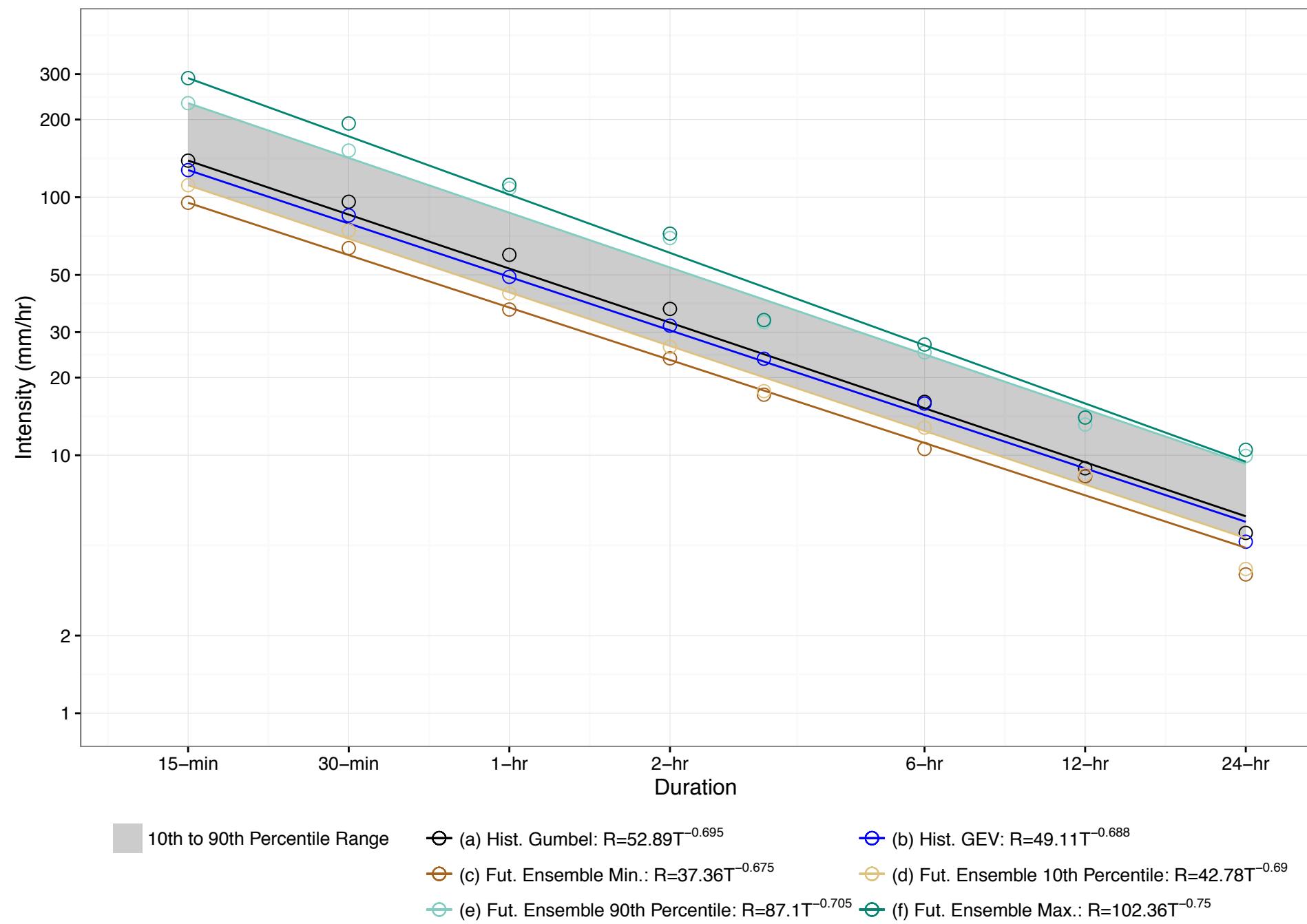


Figure A-19: IDF Curve Comparison for Windsor Airport, 2030s 2-year Return Period Event (10th–90th Percentile)

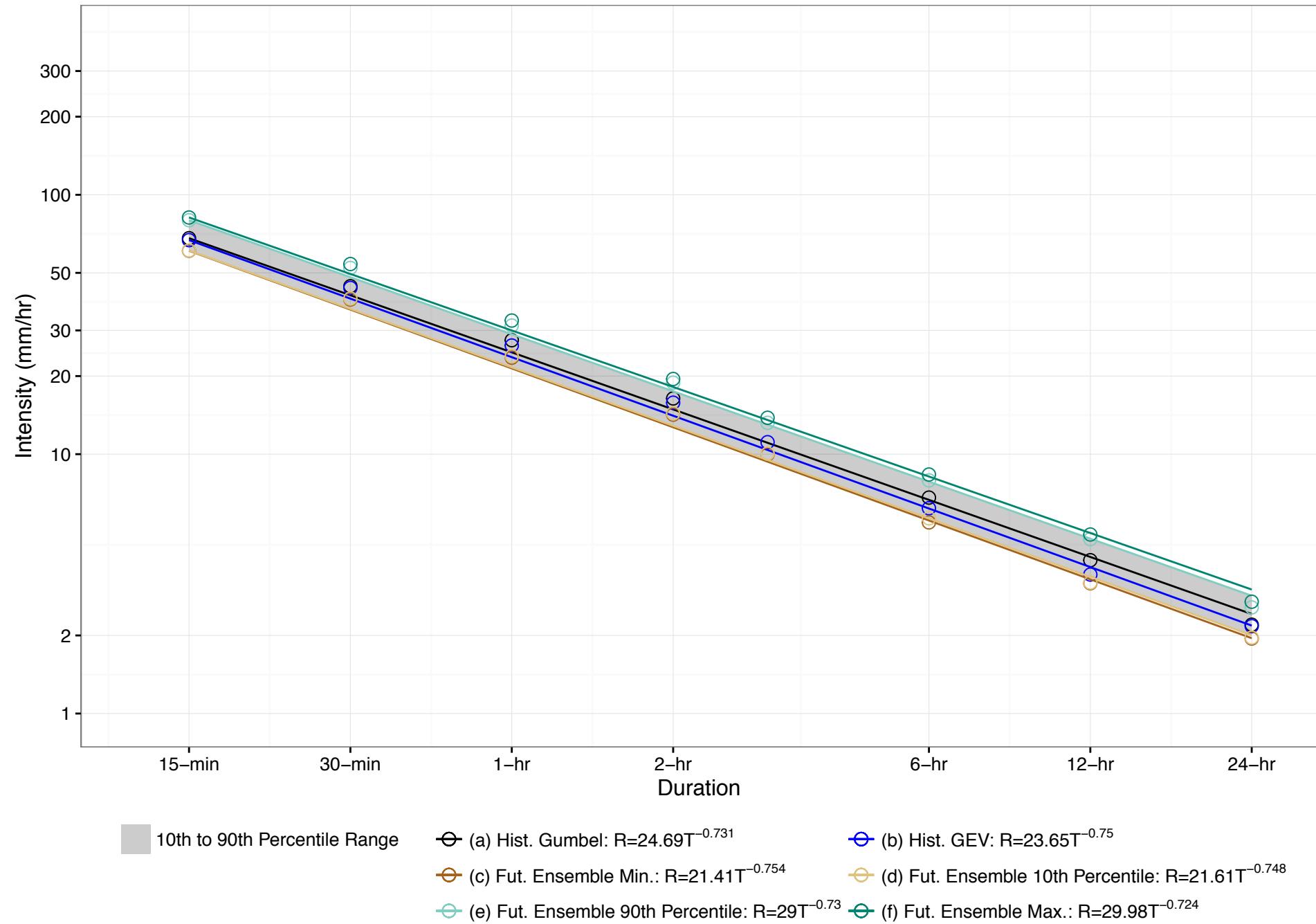


Figure A-20: IDF Curve Comparison for Windsor Airport, 2030s 5-year Return Period Event (10th–90th Percentile)

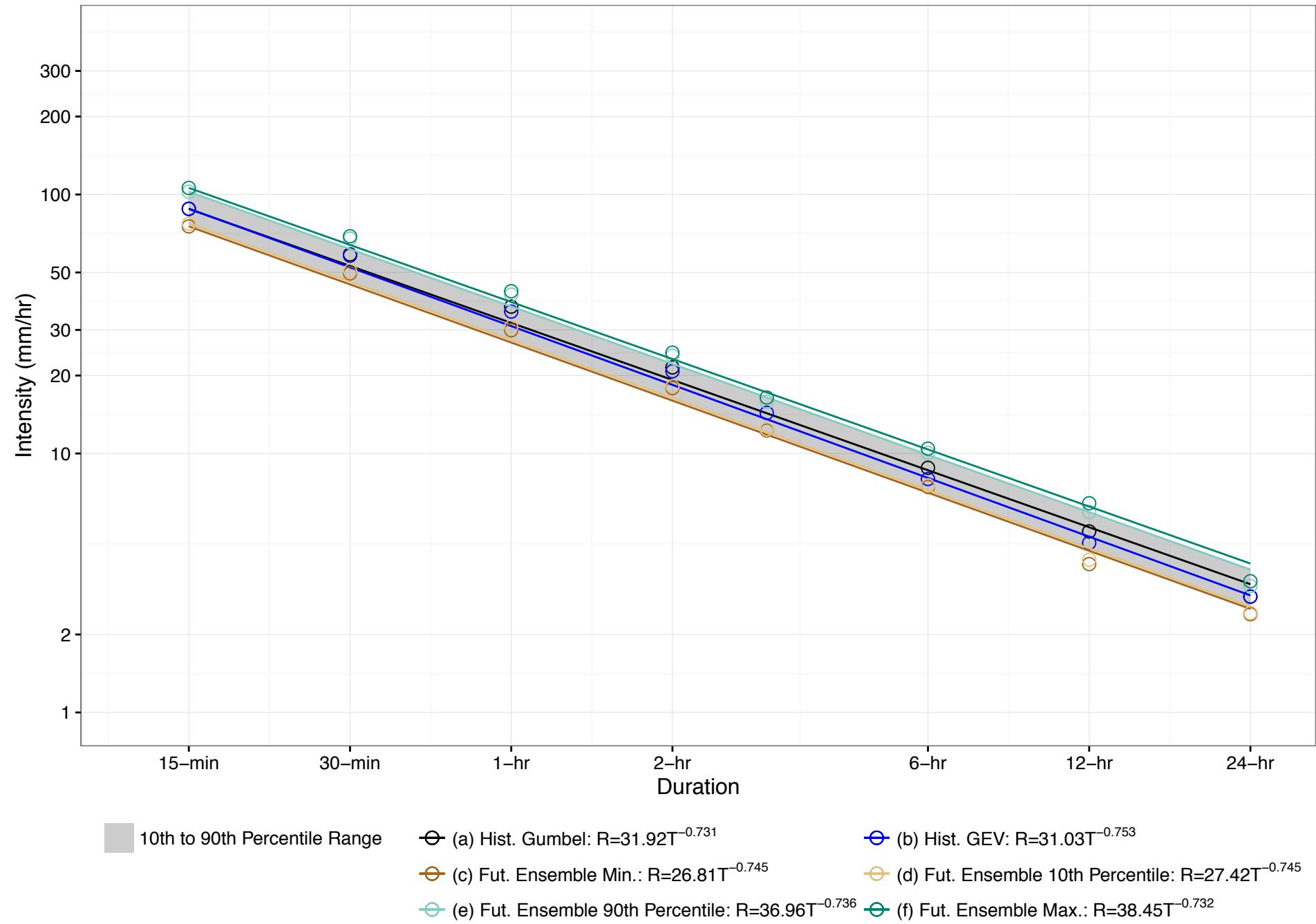


Figure A-21: IDF Curve Comparison for Windsor Airport, 2030s 10-year Return Period Event (10th–90th Percentile)

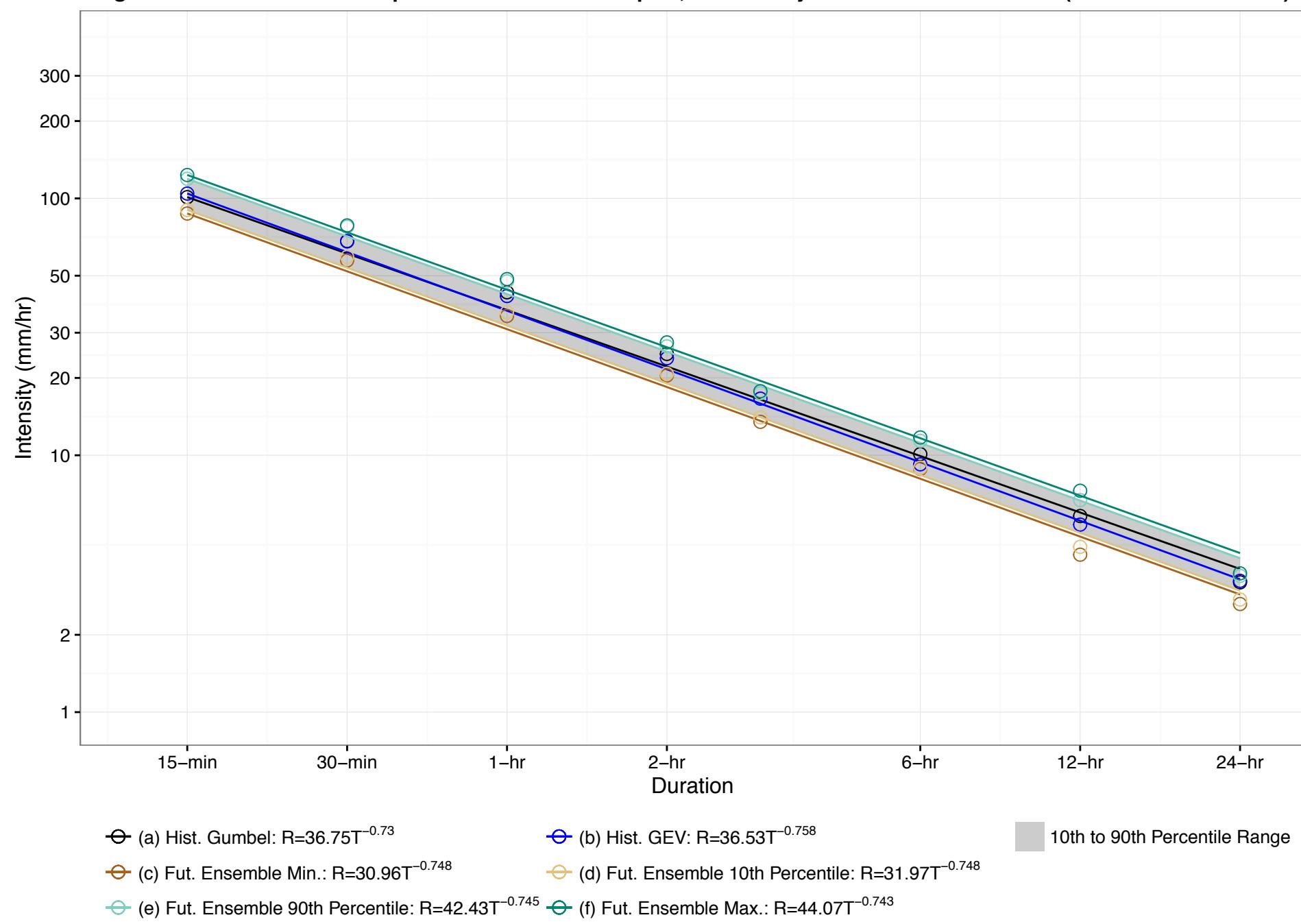


Figure A-22: IDF Curve Comparison for Windsor Airport, 2030s 25-year Return Period Event (10th–90th Percentile)

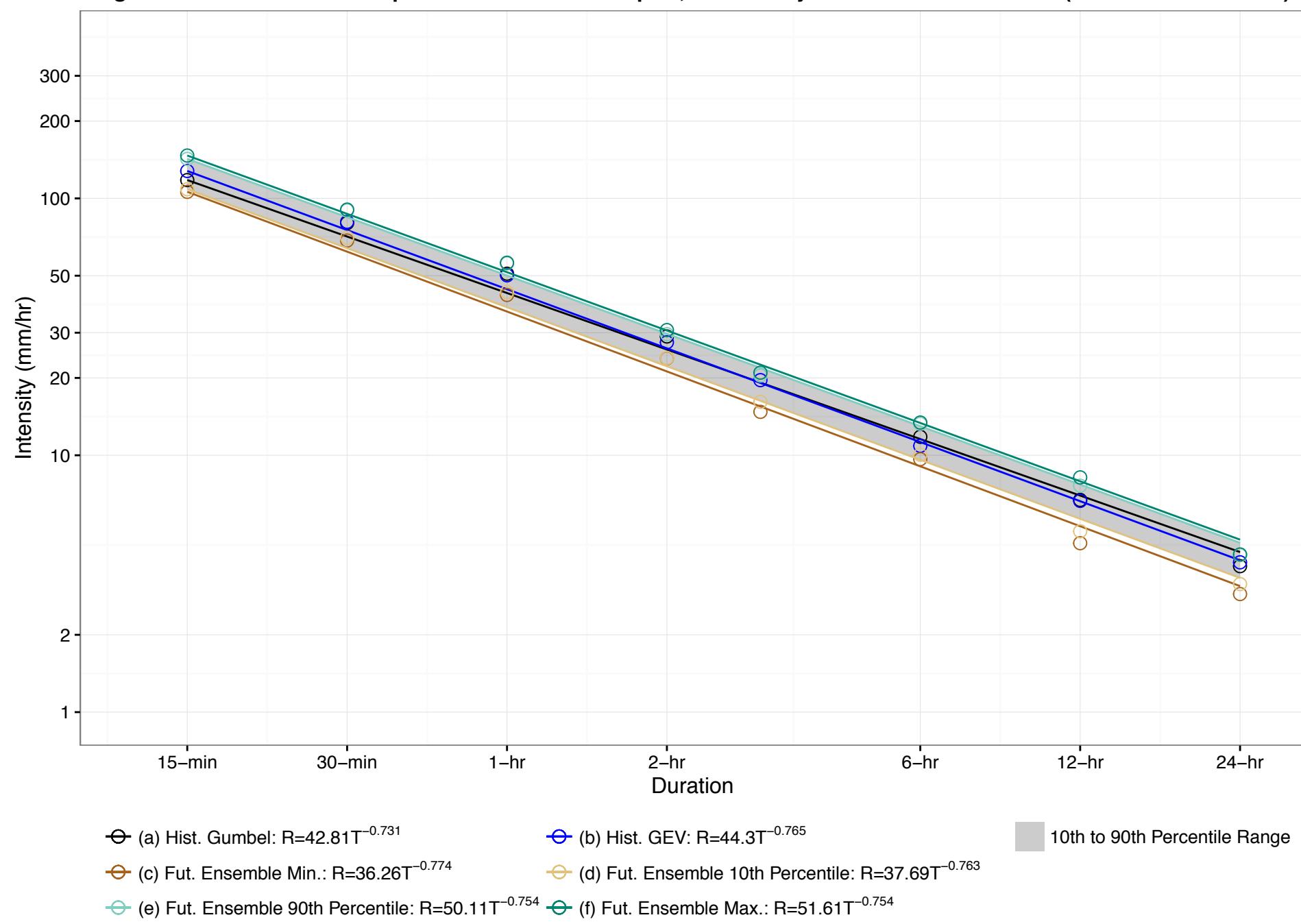


Figure A–23: IDF Curve Comparison for Windsor Airport, 2030s 50-year Return Period Event (10th–90th Percentile)

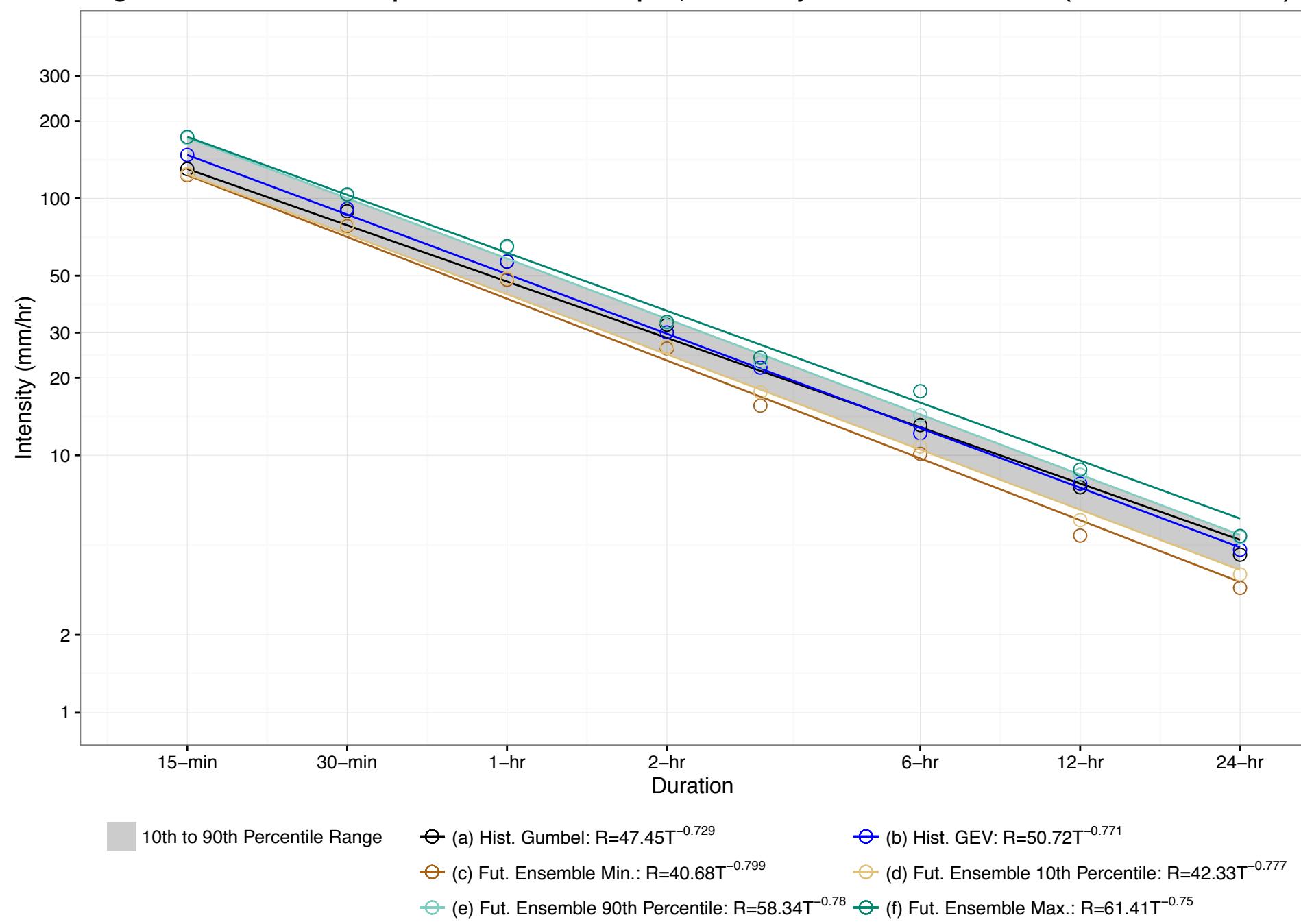
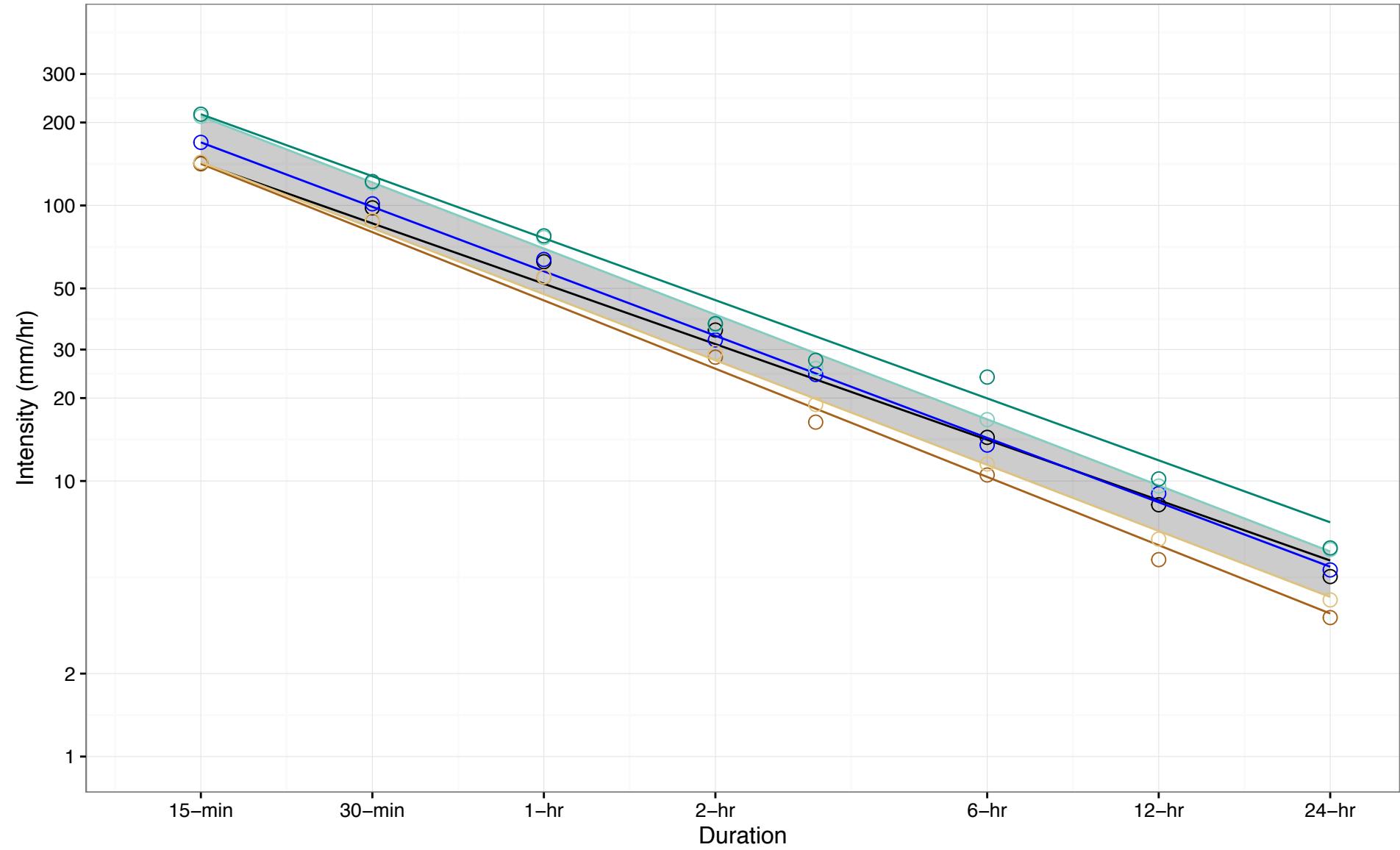


Figure A–24: IDF Curve Comparison for Windsor Airport, 2030s 100–year Return Period Event (10th–90th Percentile)



(a) Hist. Gumbel:  $R=51.99T^{-0.728}$

(c) Fut. Ensemble Min.:  $R=45.22T^{-0.823}$

(e) Fut. Ensemble 90th Percentile:  $R=69.78T^{-0.797}$

(b) Hist. GEV:  $R=57.7T^{-0.777}$

(d) Fut. Ensemble 10th Percentile:  $R=47.62T^{-0.796}$

(f) Fut. Ensemble Max.:  $R=76.08T^{-0.747}$

10th to 90th Percentile Range

Figure A-25: IDF Curve Comparison for Windsor Airport, 2050s 2-year Return Period Event (10th–90th Percentile)

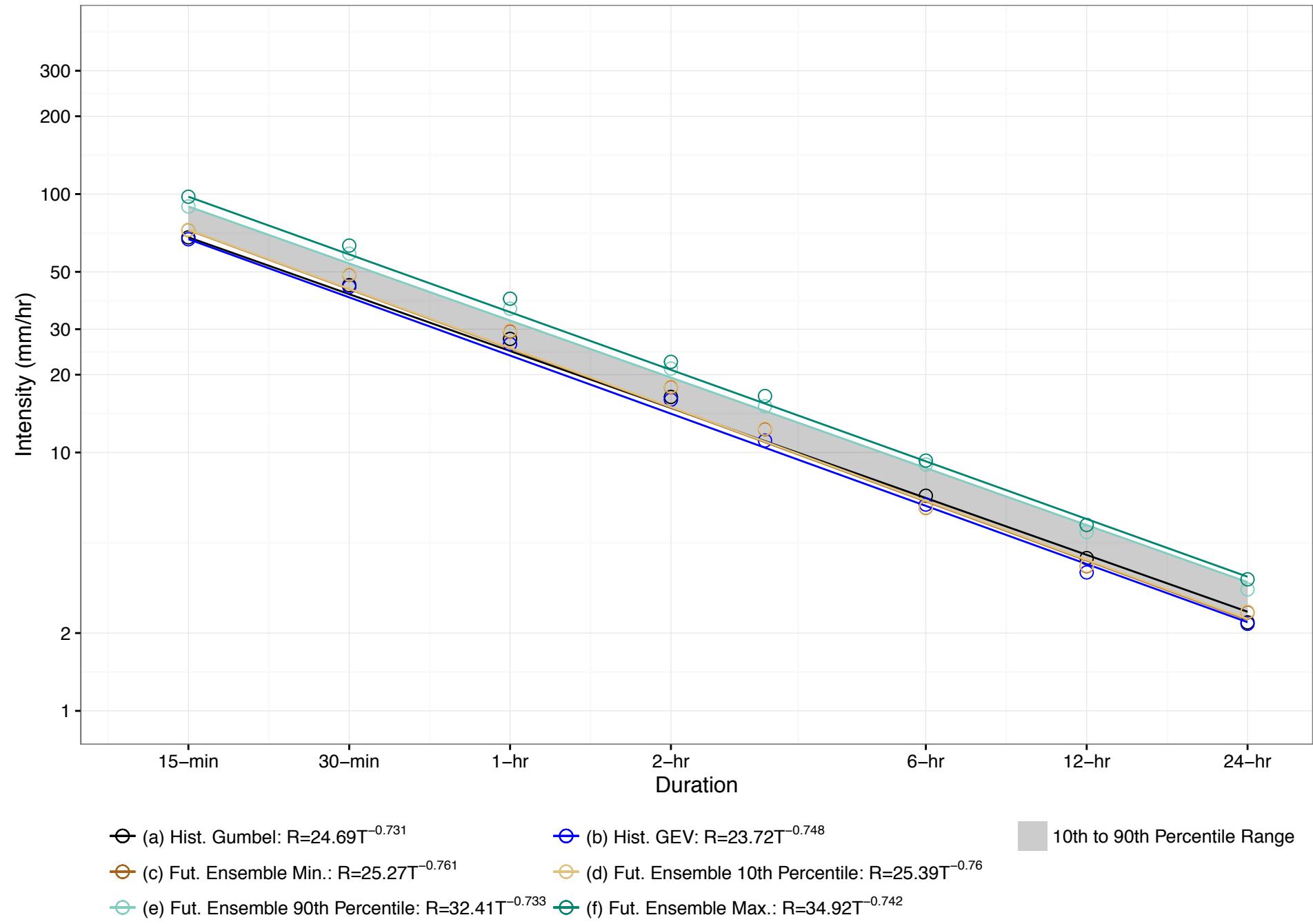


Figure A-26: IDF Curve Comparison for Windsor Airport, 2050s 5-year Return Period Event (10th–90th Percentile)

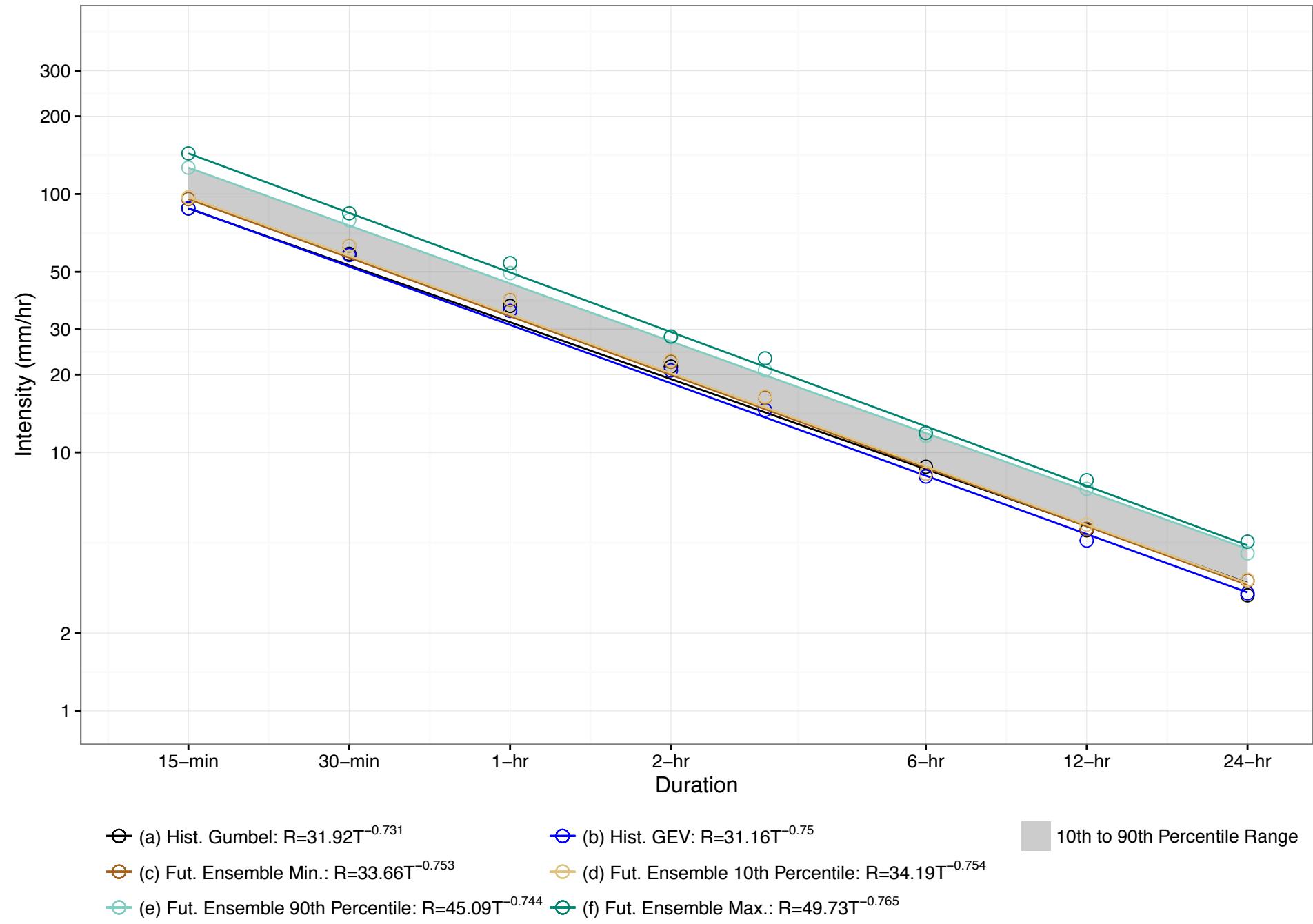


Figure A-27: IDF Curve Comparison for Windsor Airport, 2050s 10-year Return Period Event (10th–90th Percentile)

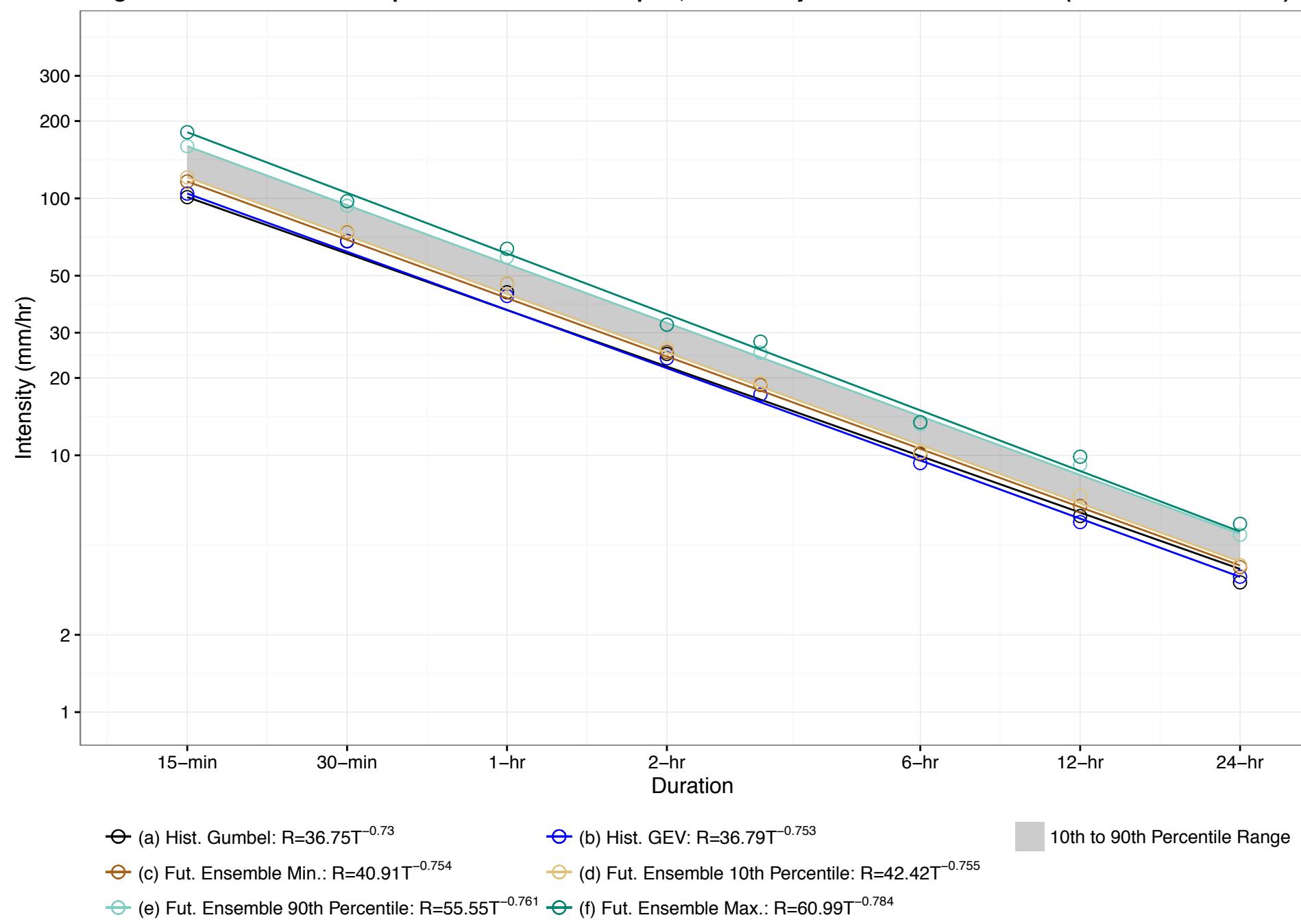


Figure A-28: IDF Curve Comparison for Windsor Airport, 2050s 25-year Return Period Event (10th–90th Percentile)

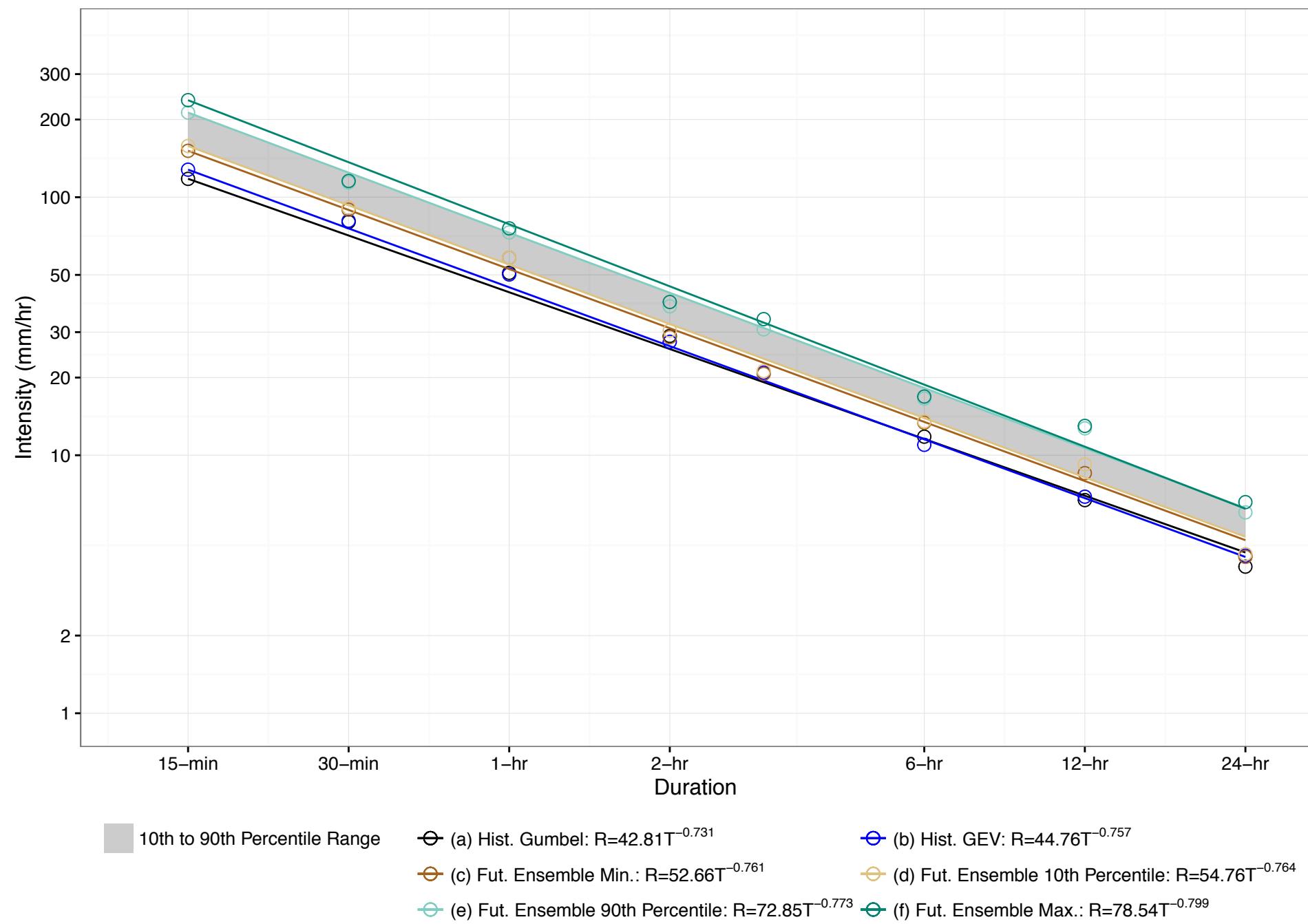


Figure A-29: IDF Curve Comparison for Windsor Airport, 2050s 50-year Return Period Event (10th–90th Percentile)

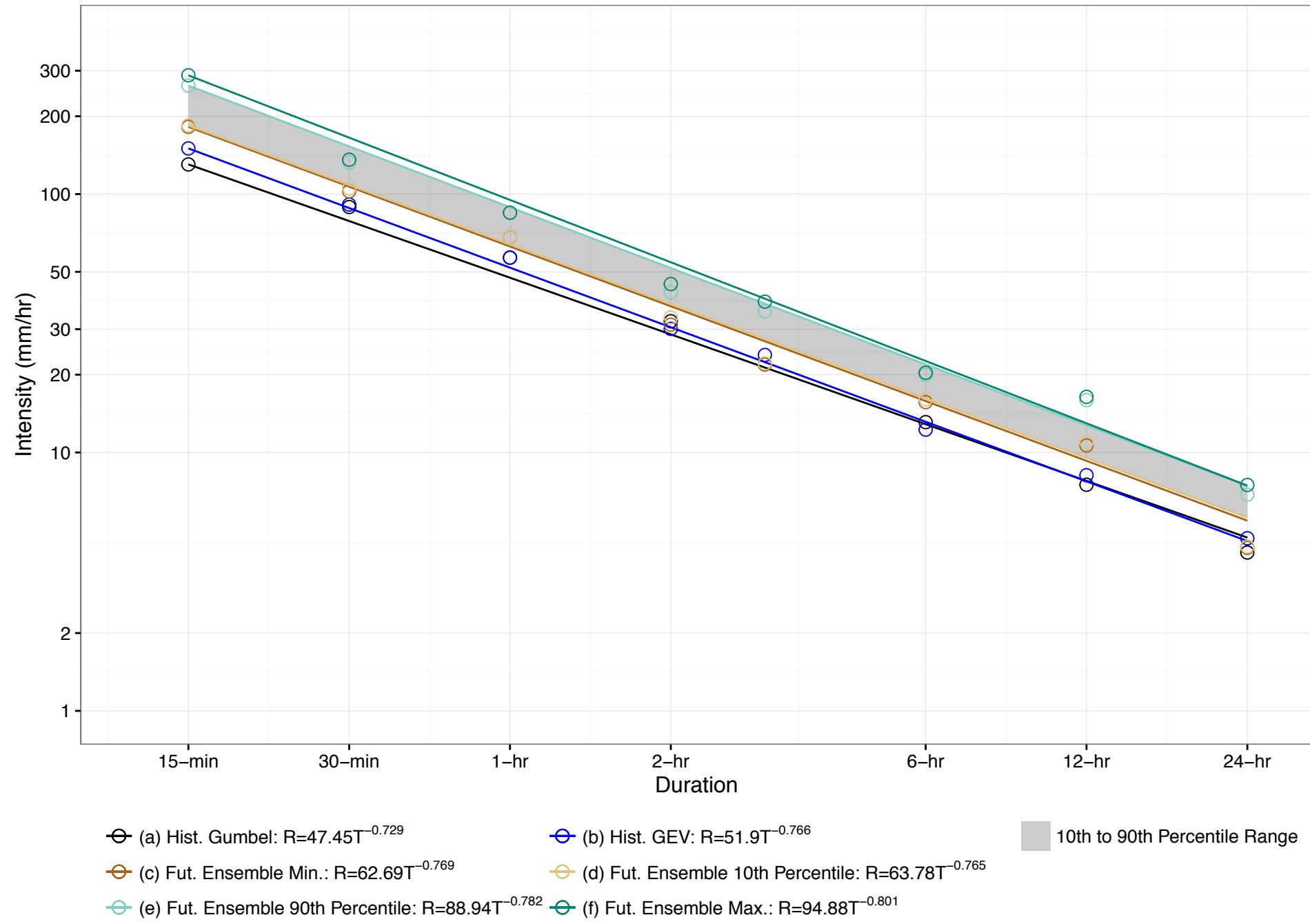


Figure A–30: IDF Curve Comparison for Windsor Airport, 2050s 100-year Return Period Event (10th–90th Percentile)

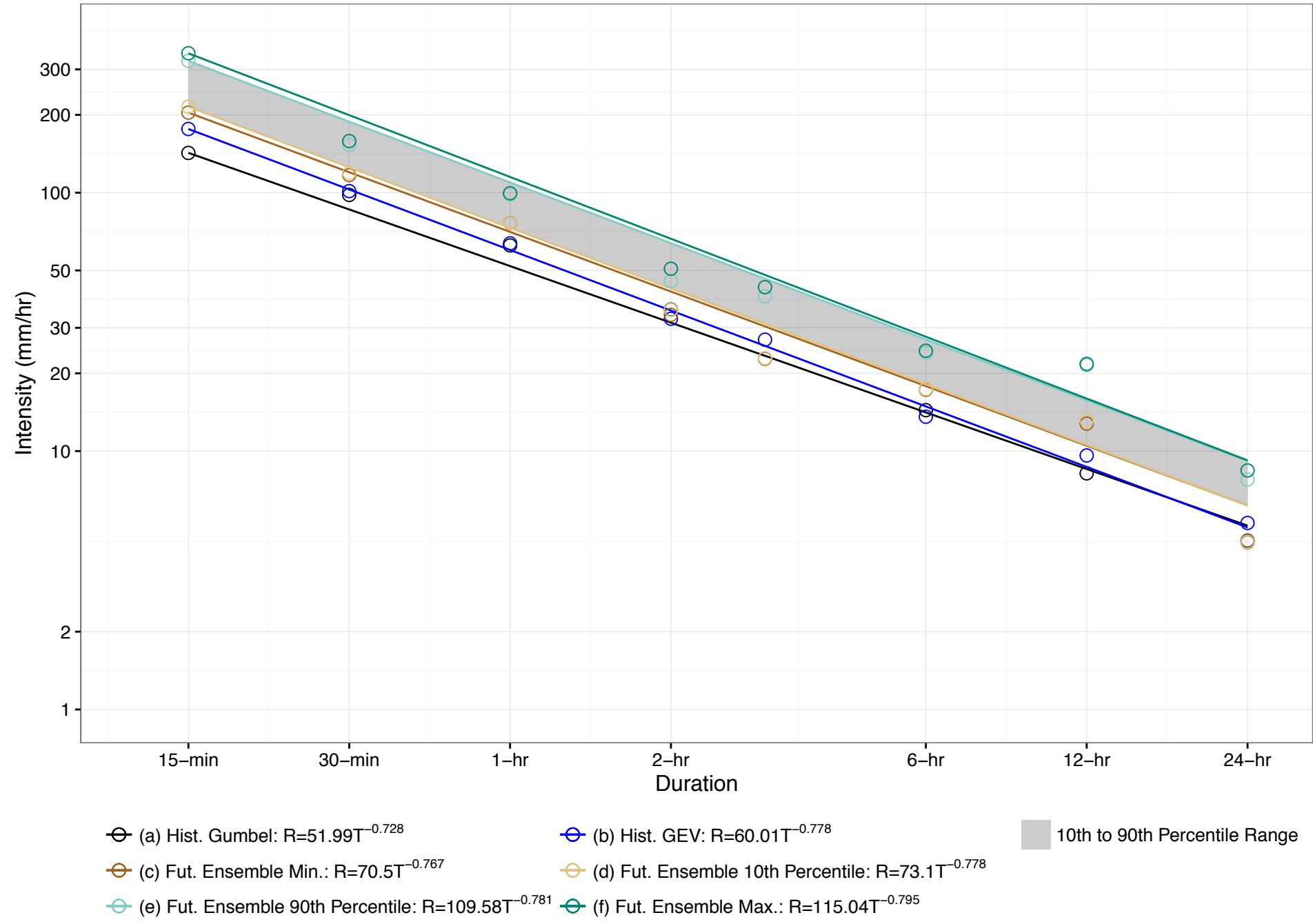


Figure A-31: IDF Curve Comparison for Windsor Airport, 2090s 2-year Return Period Event (10th–90th Percentile)

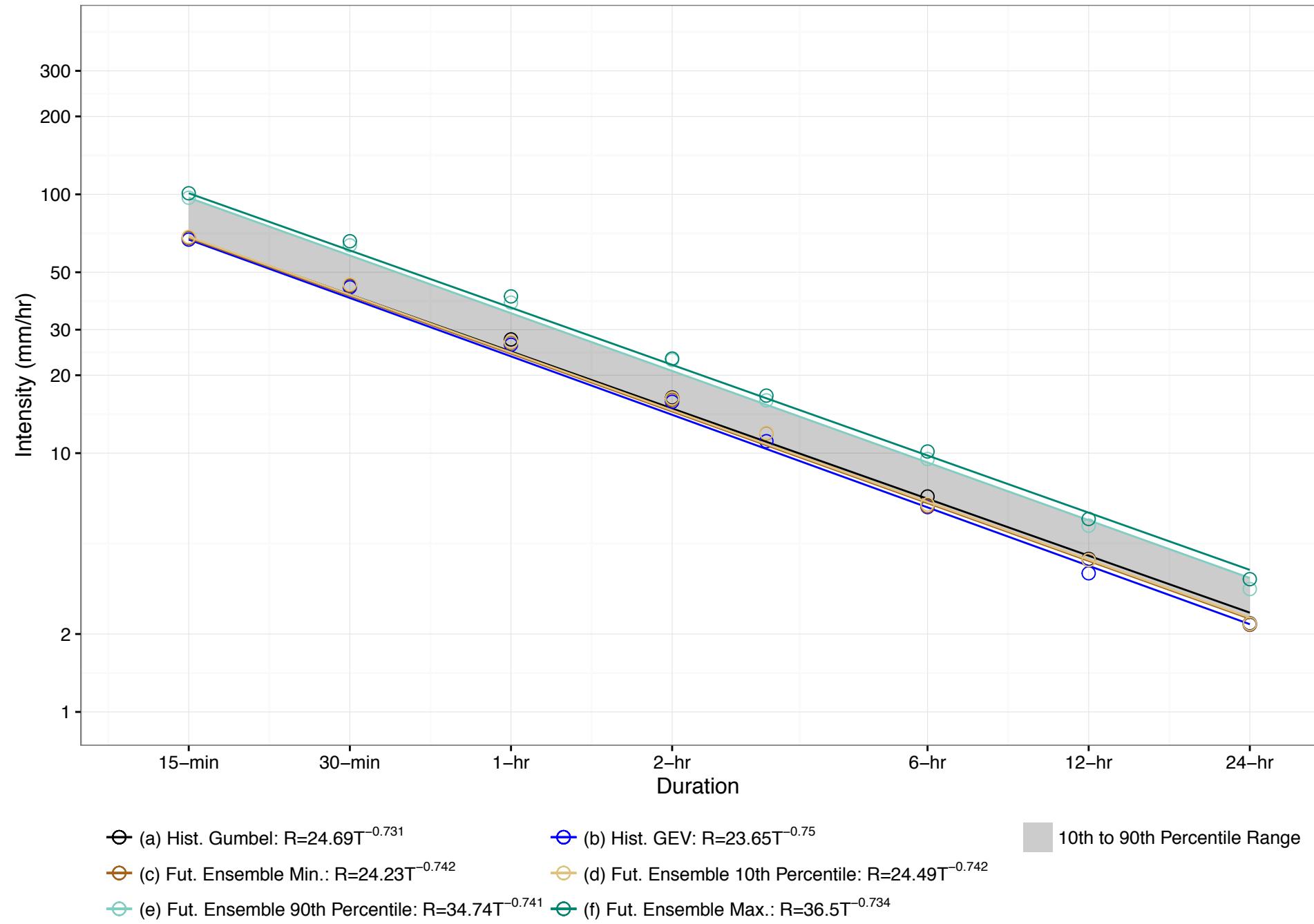


Figure A-32: IDF Curve Comparison for Windsor Airport, 2090s 5-year Return Period Event (10th–90th Percentile)

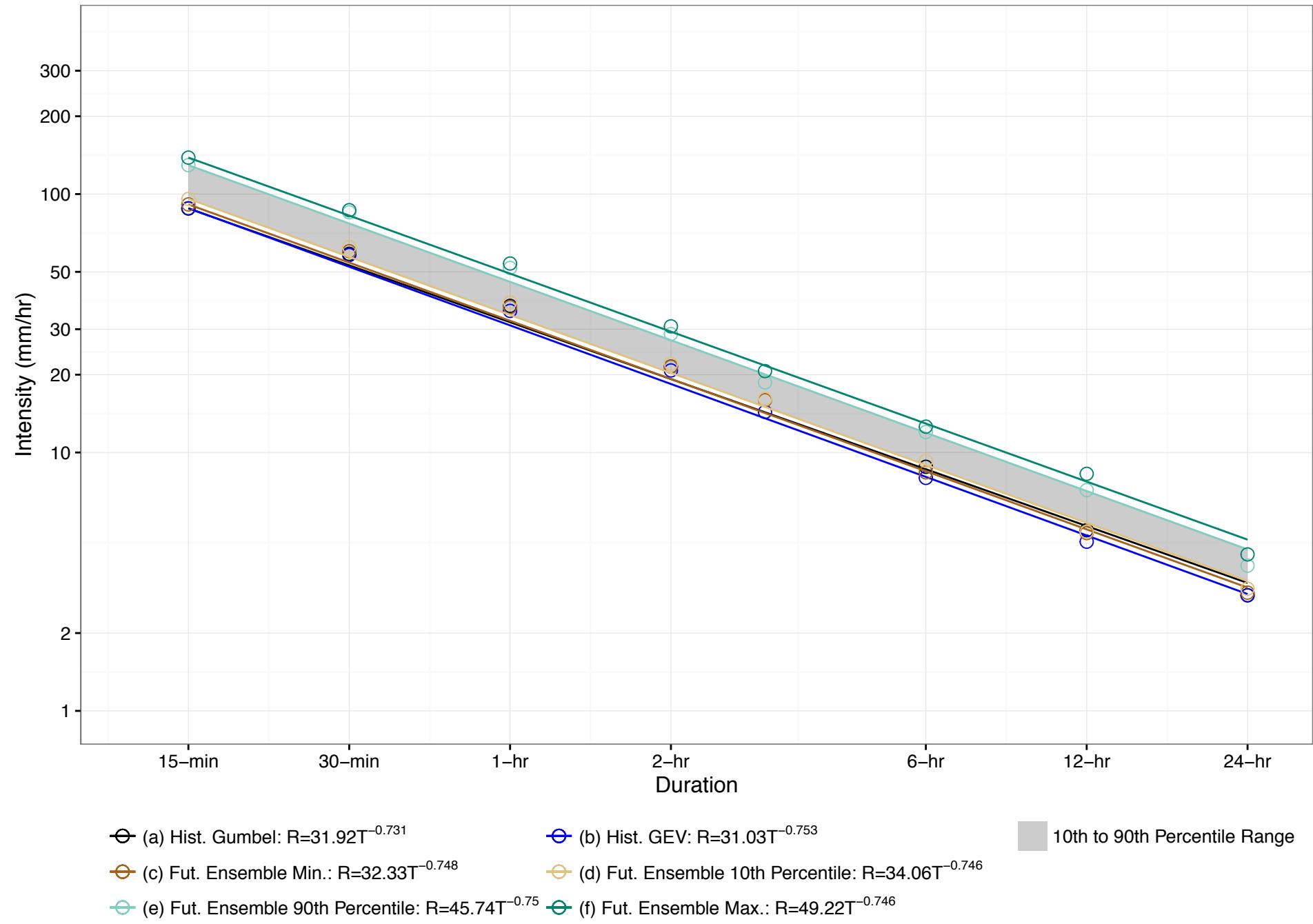


Figure A-33: IDF Curve Comparison for Windsor Airport, 2090s 10-year Return Period Event (10th–90th Percentile)

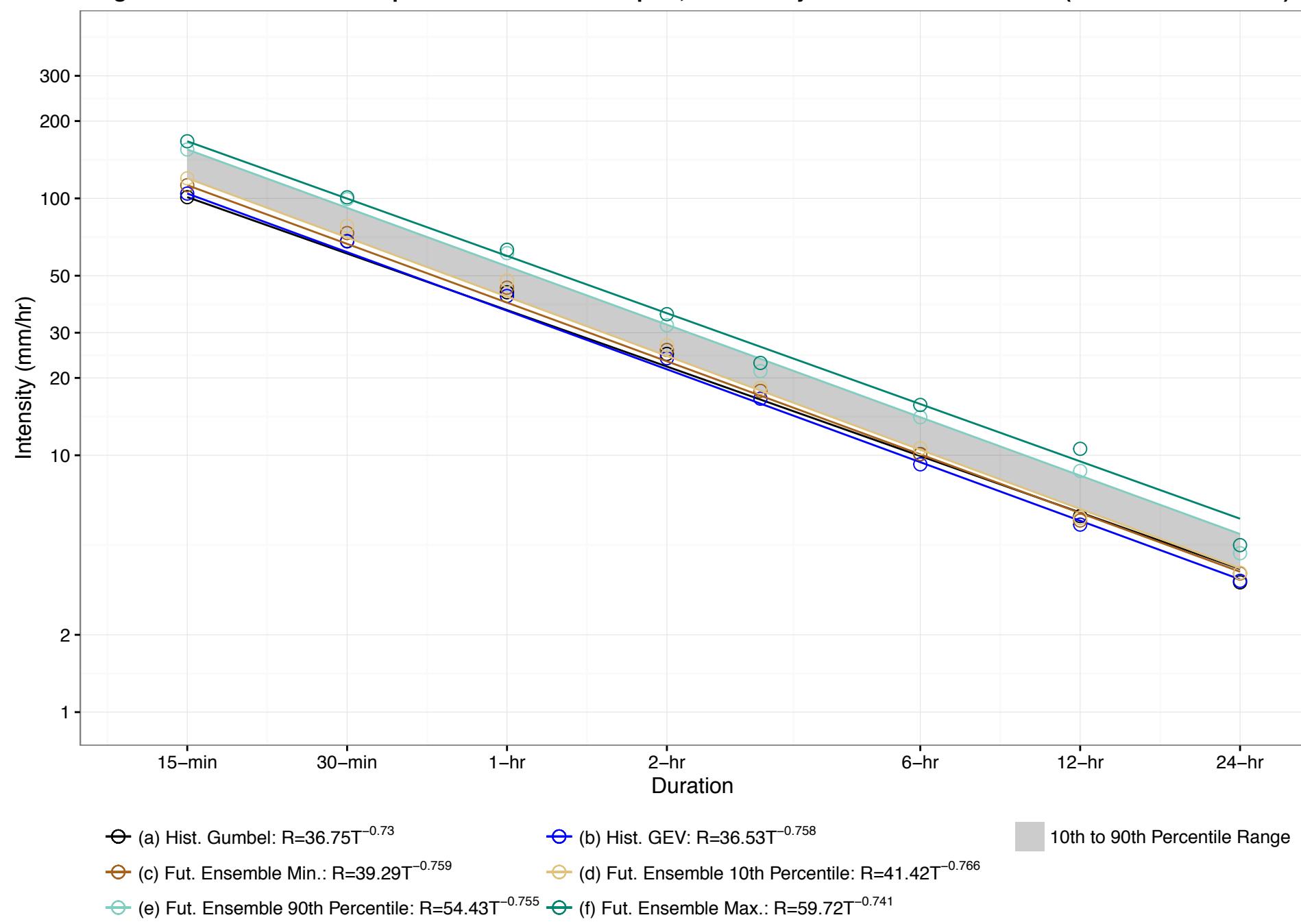


Figure A-34: IDF Curve Comparison for Windsor Airport, 2090s 25-year Return Period Event (10th–90th Percentile)

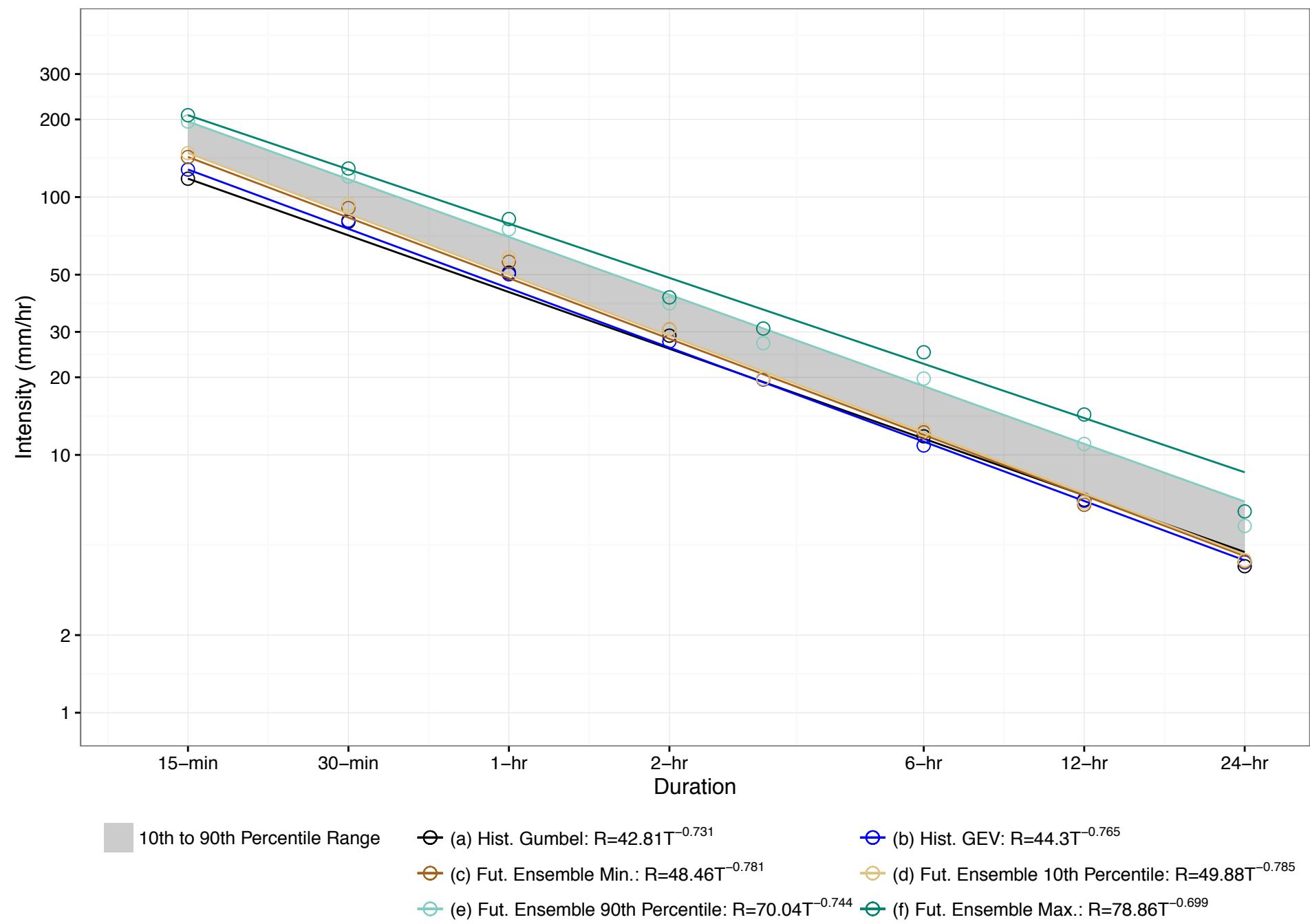


Figure A-35: IDF Curve Comparison for Windsor Airport, 2090s 50-year Return Period Event (10th–90th Percentile)

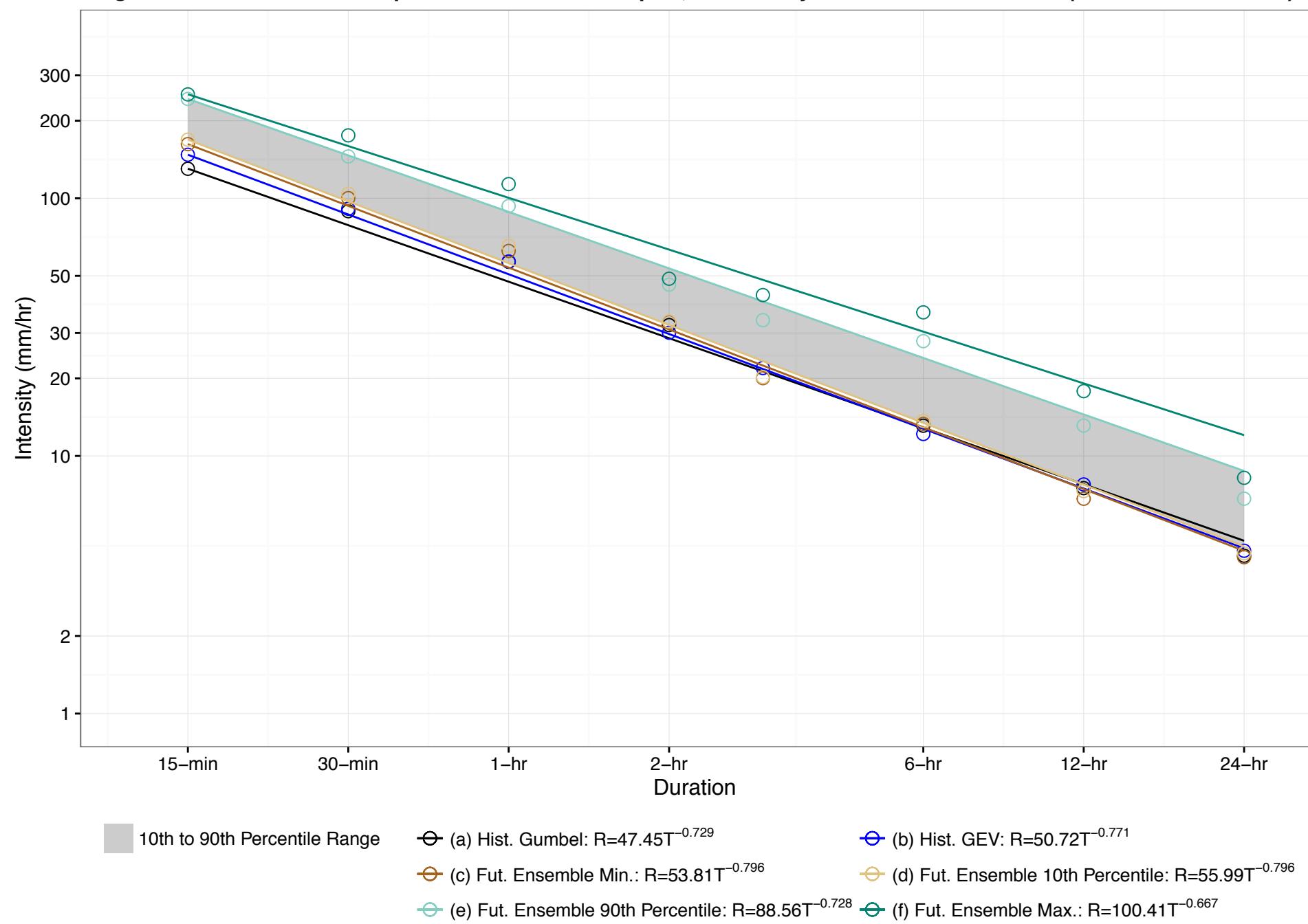


Figure A–36: IDF Curve Comparison for Windsor Airport, 2090s 100–year Return Period Event (10th–90th Percentile)

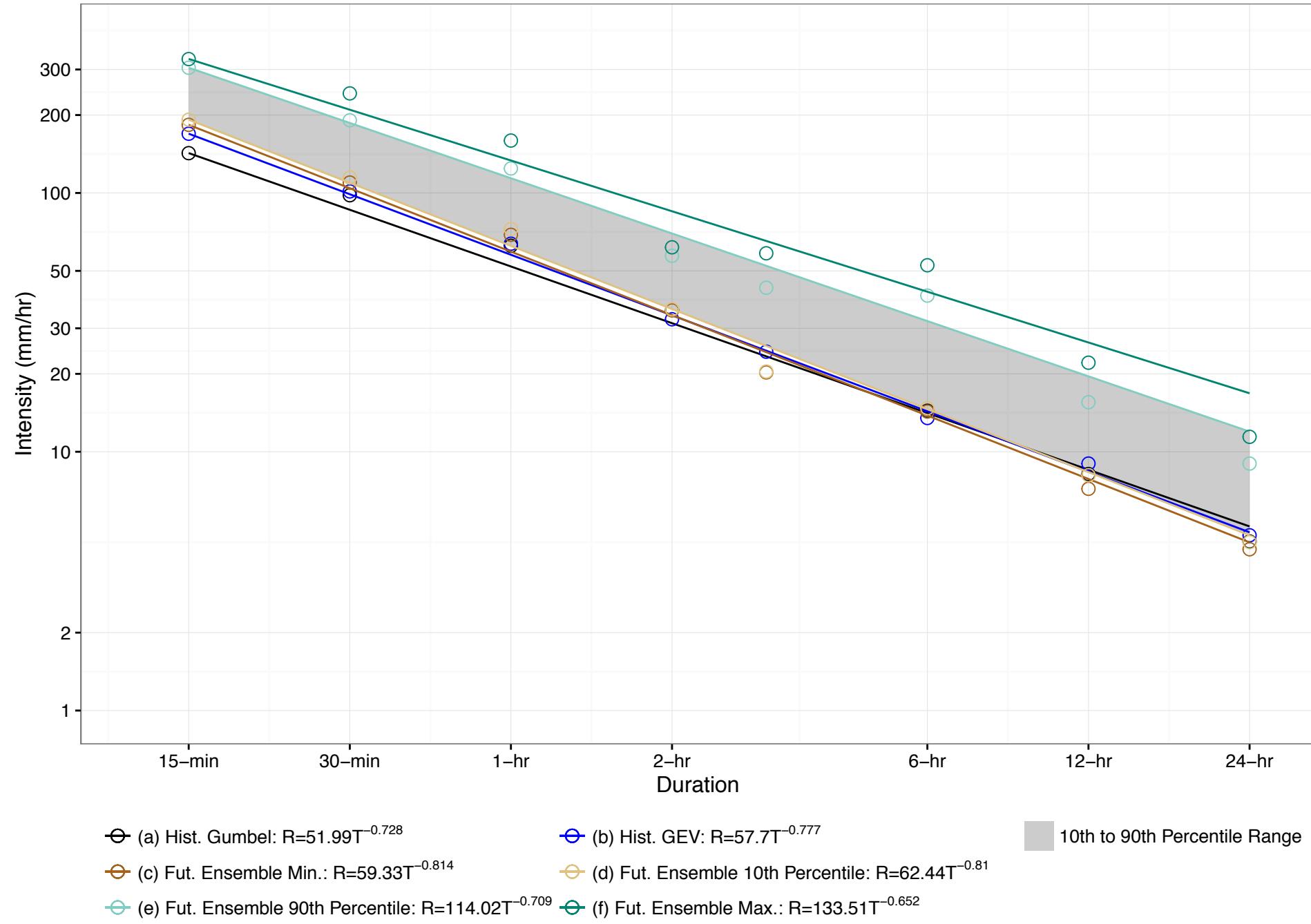


Figure A-37: IDF Curve Comparison for Pearson Airport, 2090s 2-year Return Period Event (50th–75th Percentile)

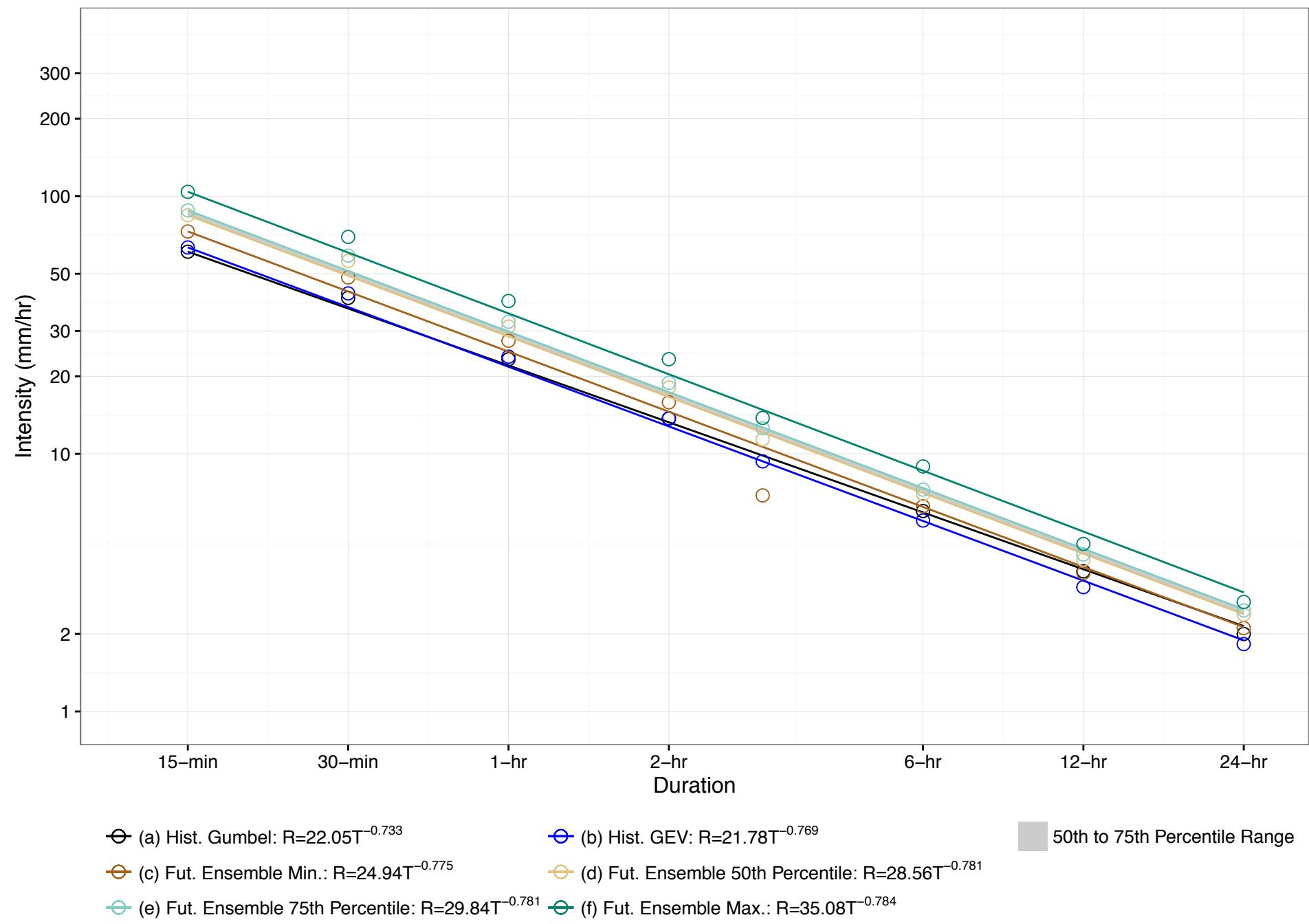


Figure A-38: IDF Curve Comparison for Pearson Airport, 2090s 5-year Return Period Event (50th–75th Percentile)

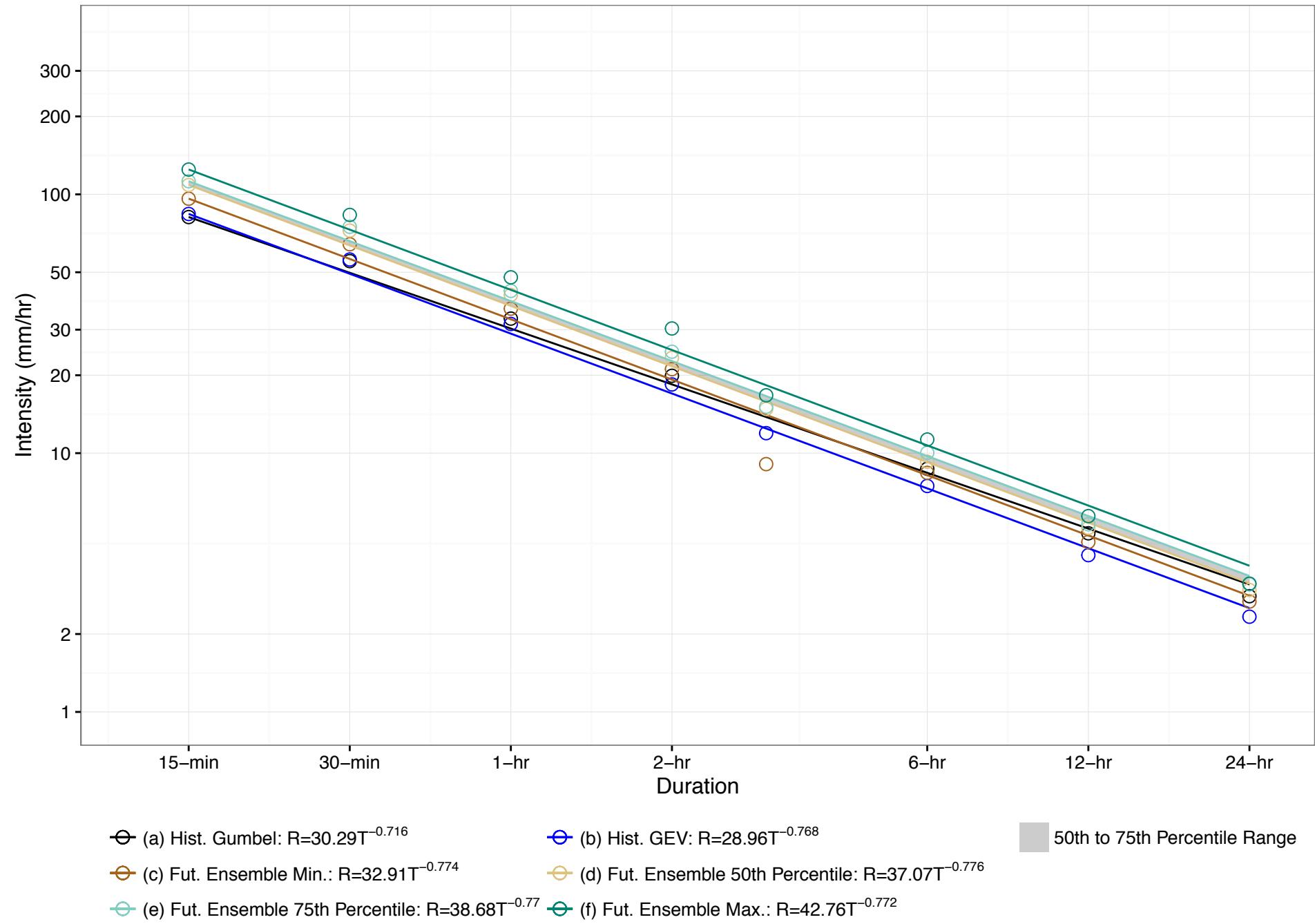


Figure A-39: IDF Curve Comparison for Pearson Airport, 2090s 10-year Return Period Event (50th–75th Percentile)

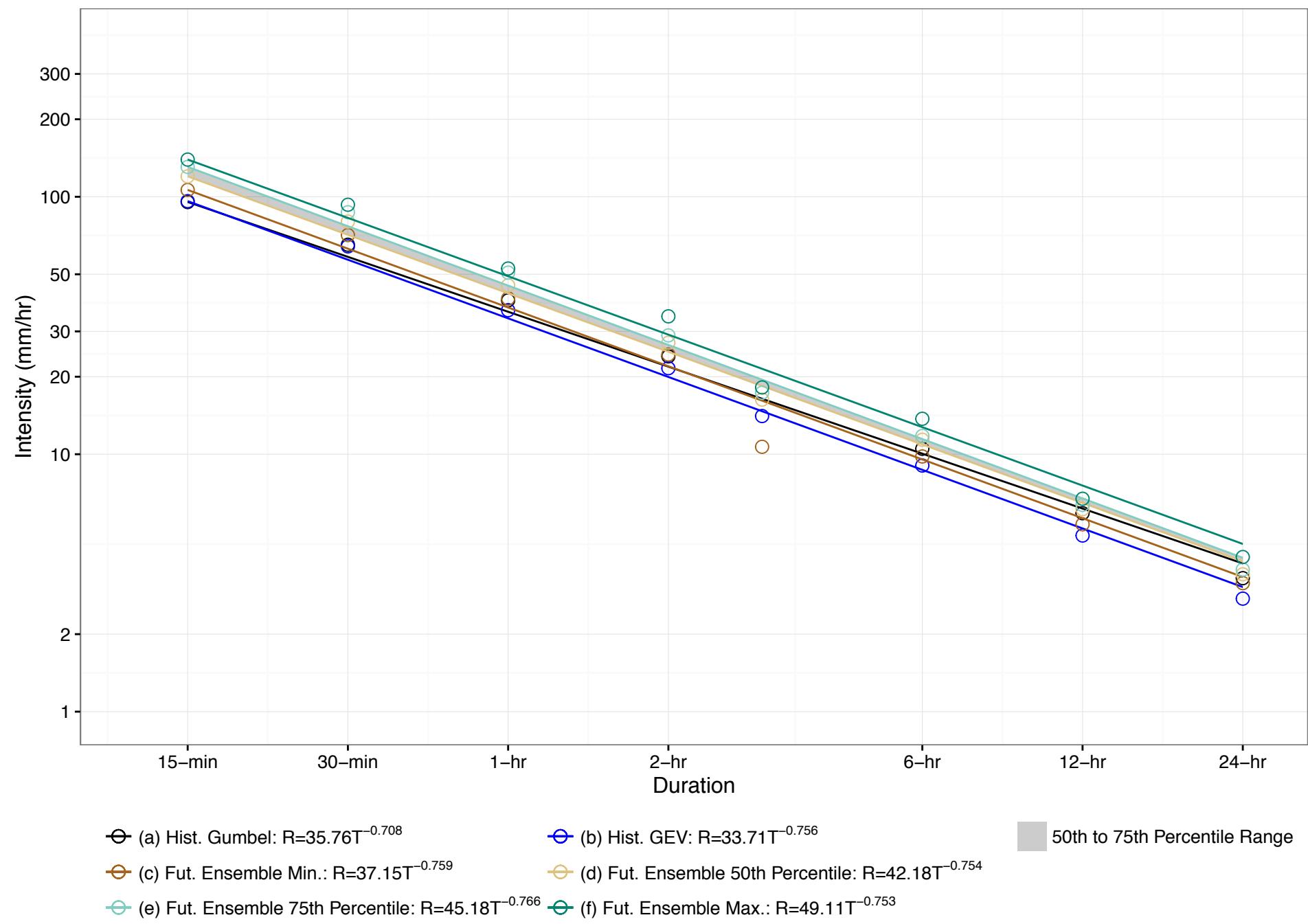


Figure A-40: IDF Curve Comparison for Pearson Airport, 2090s 25-year Return Period Event (50th–75th Percentile)

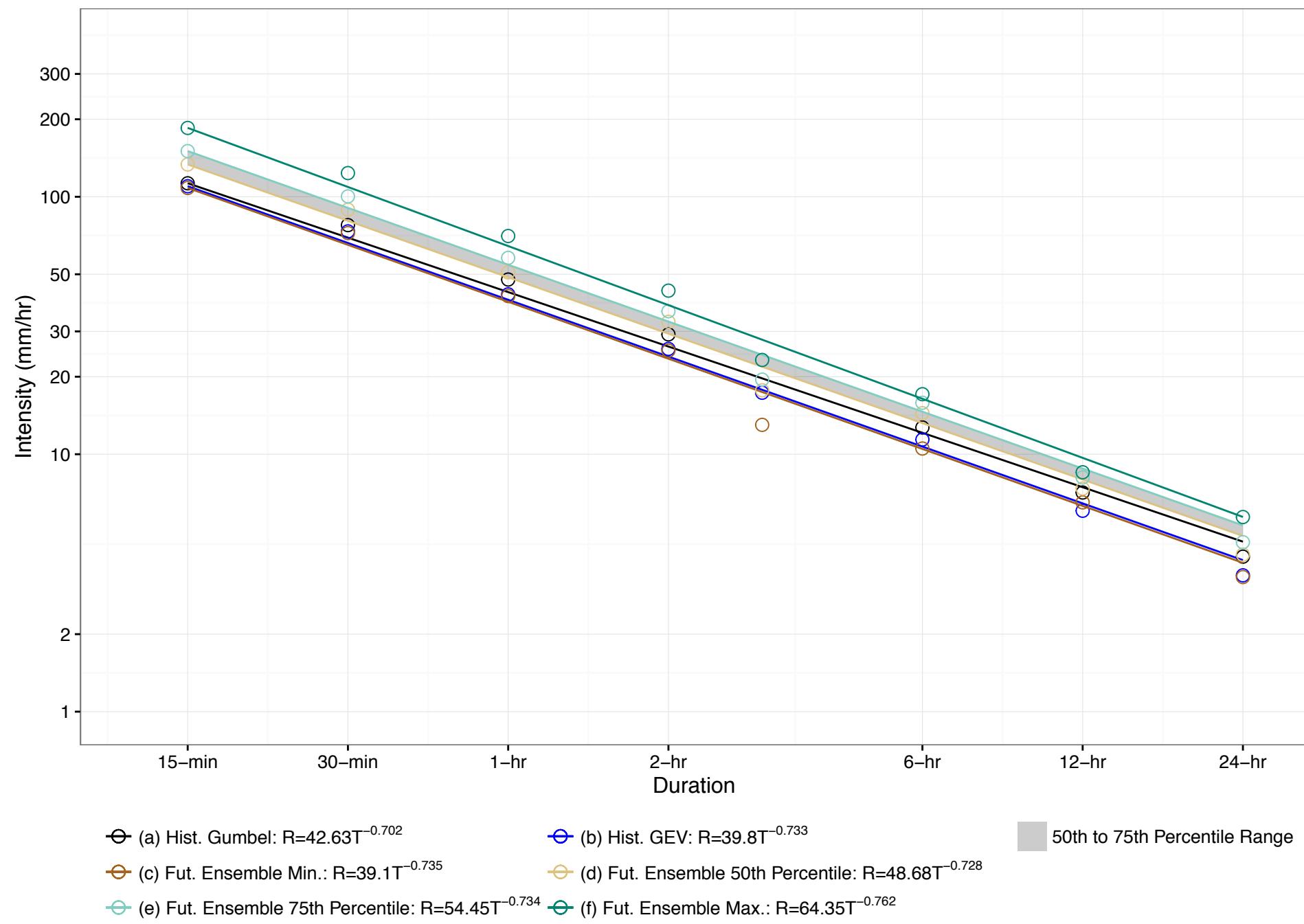


Figure A-41: IDF Curve Comparison for Pearson Airport, 2090s 50-year Return Period Event (50th–75th Percentile)

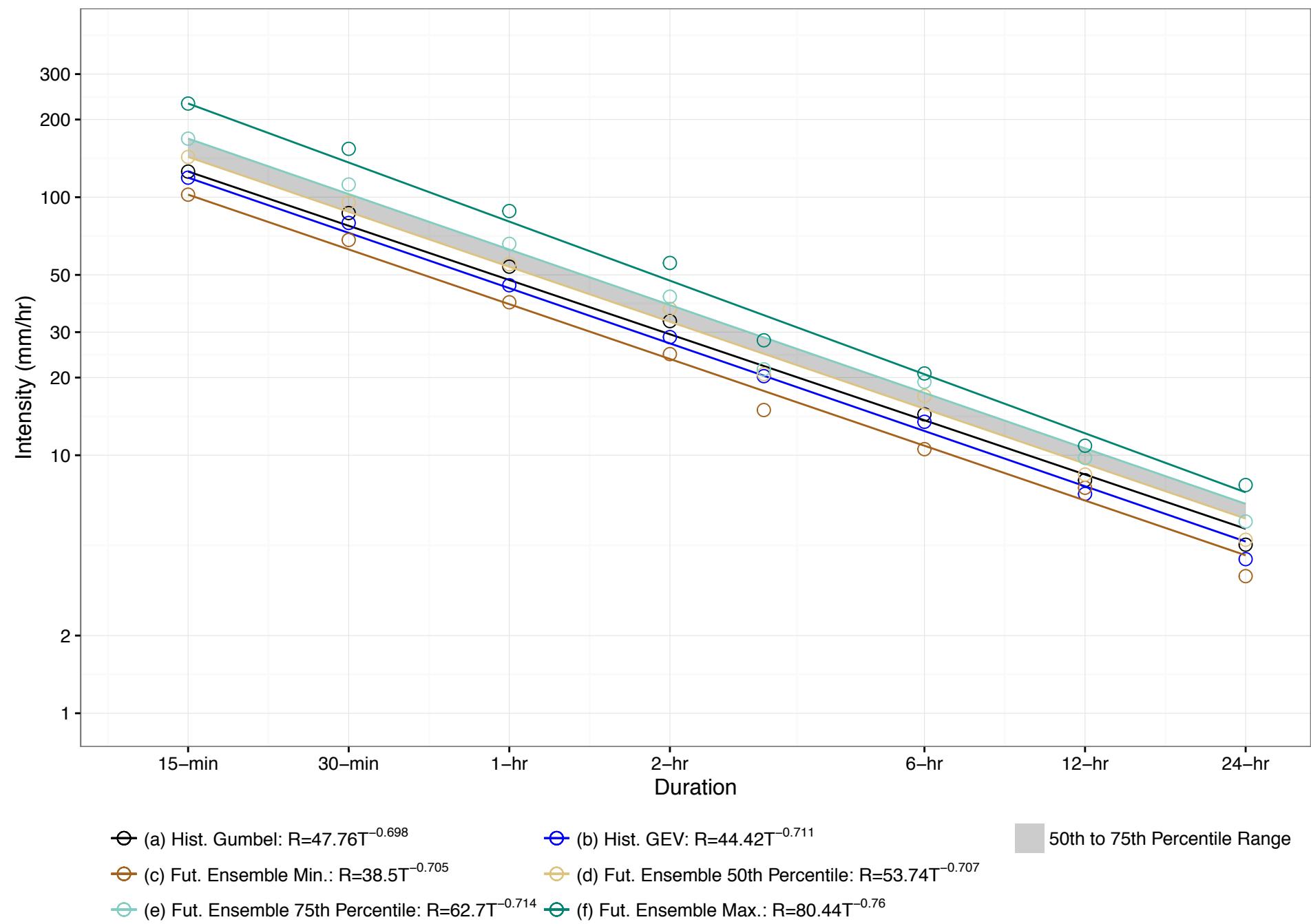


Figure A-42: IDF Curve Comparison for Pearson Airport, 2090s 100-year Return Period Event (50th–75th Percentile)

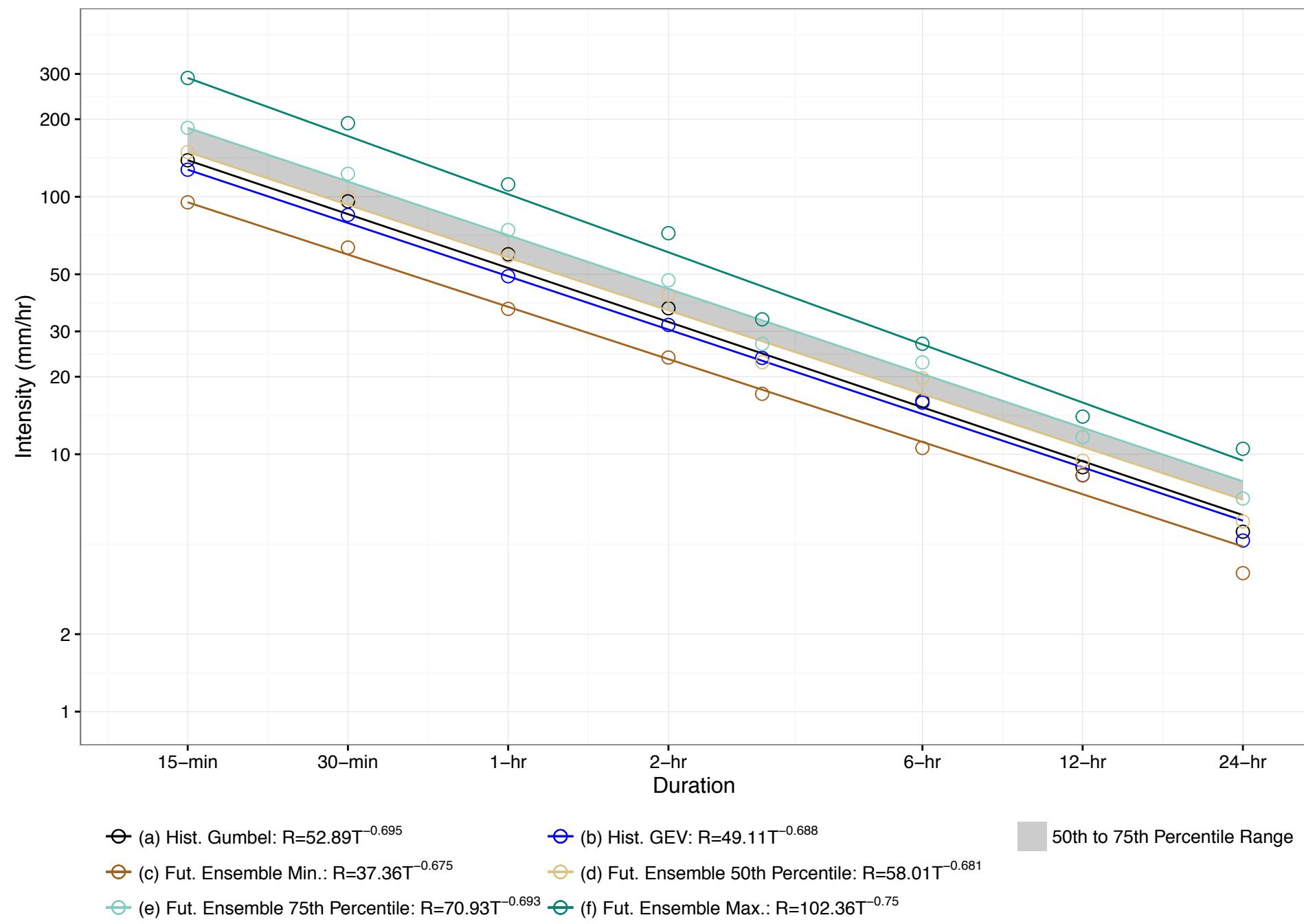


Figure A-43: IDF Curve Comparison for Windsor Airport, 2090s 2-year Return Period Event (50th–75th Percentile)

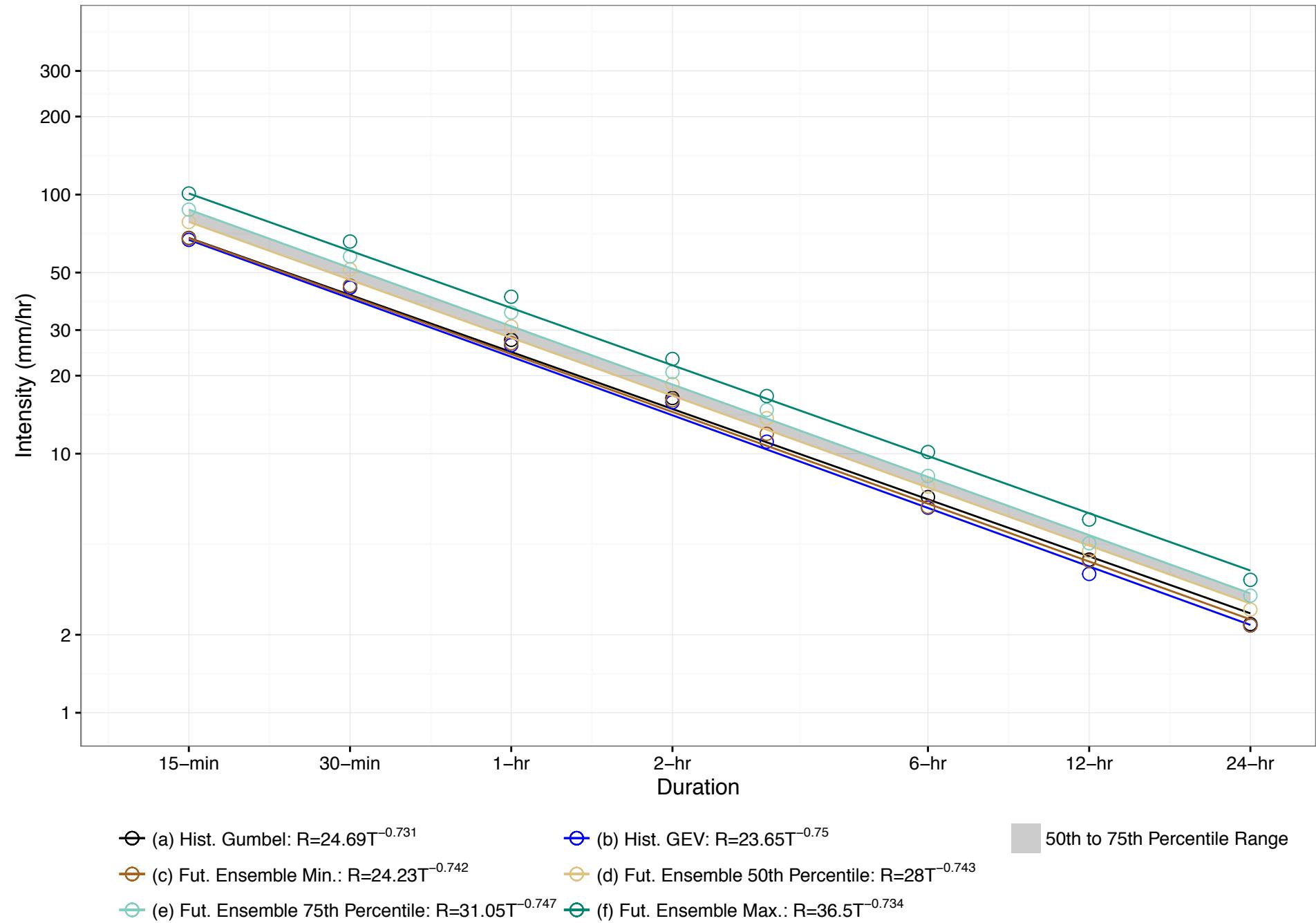


Figure A-44: IDF Curve Comparison for Windsor Airport, 2090s 5-year Return Period Event (50th–75th Percentile)

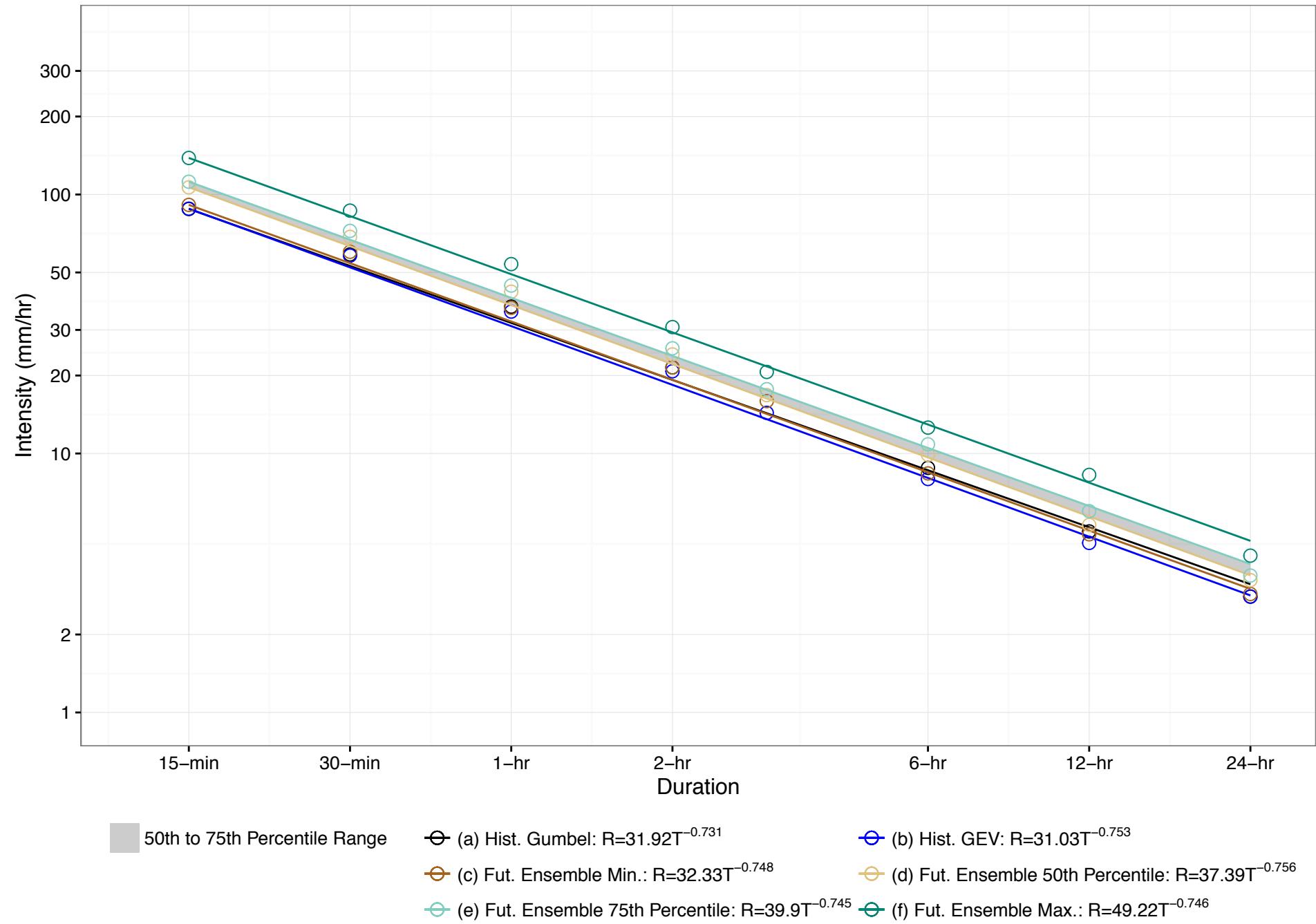


Figure A-45: IDF Curve Comparison for Windsor Airport, 2090s 10-year Return Period Event (50th–75th Percentile)

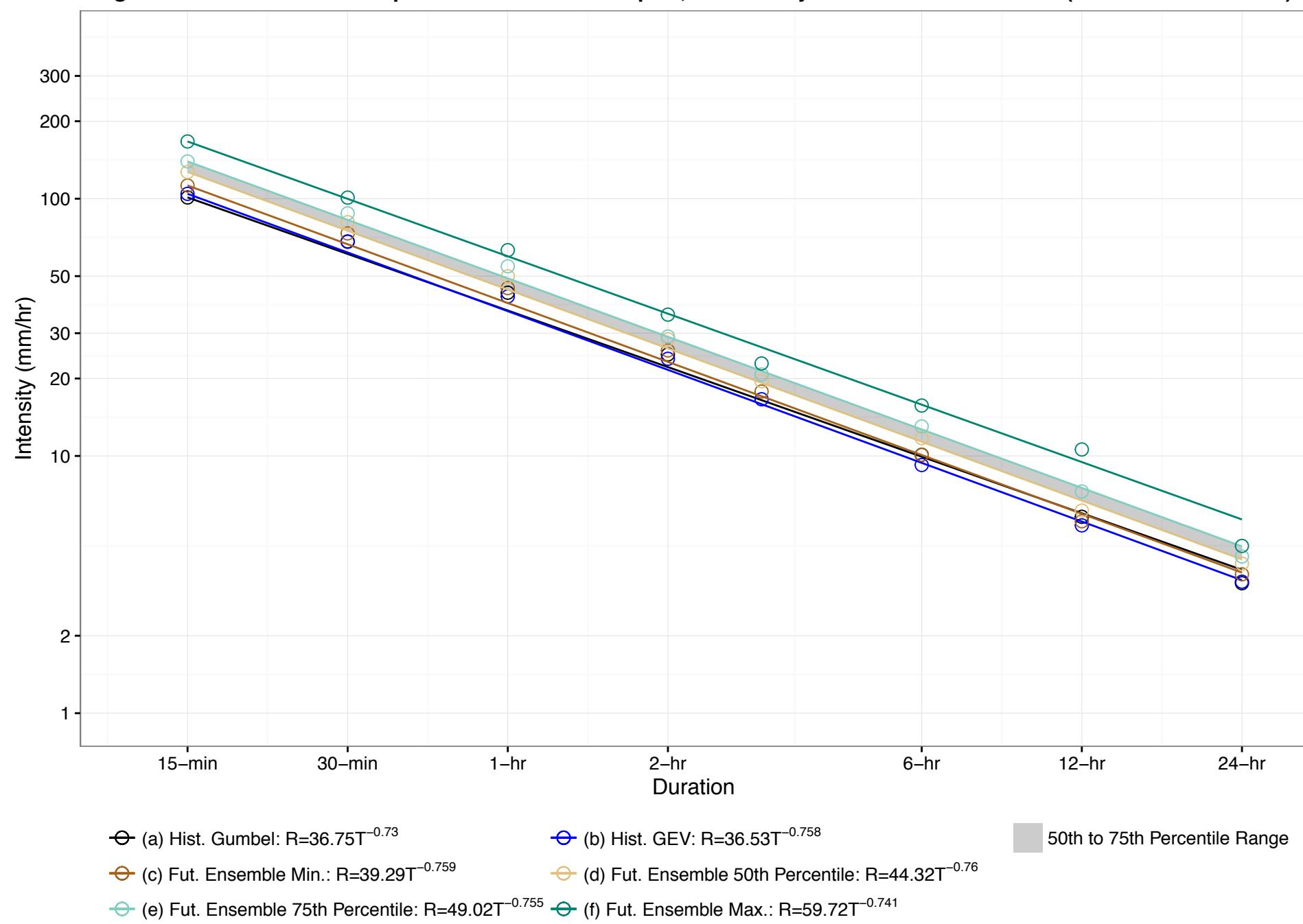


Figure A-46: IDF Curve Comparison for Windsor Airport, 2090s 25-year Return Period Event (50th–75th Percentile)

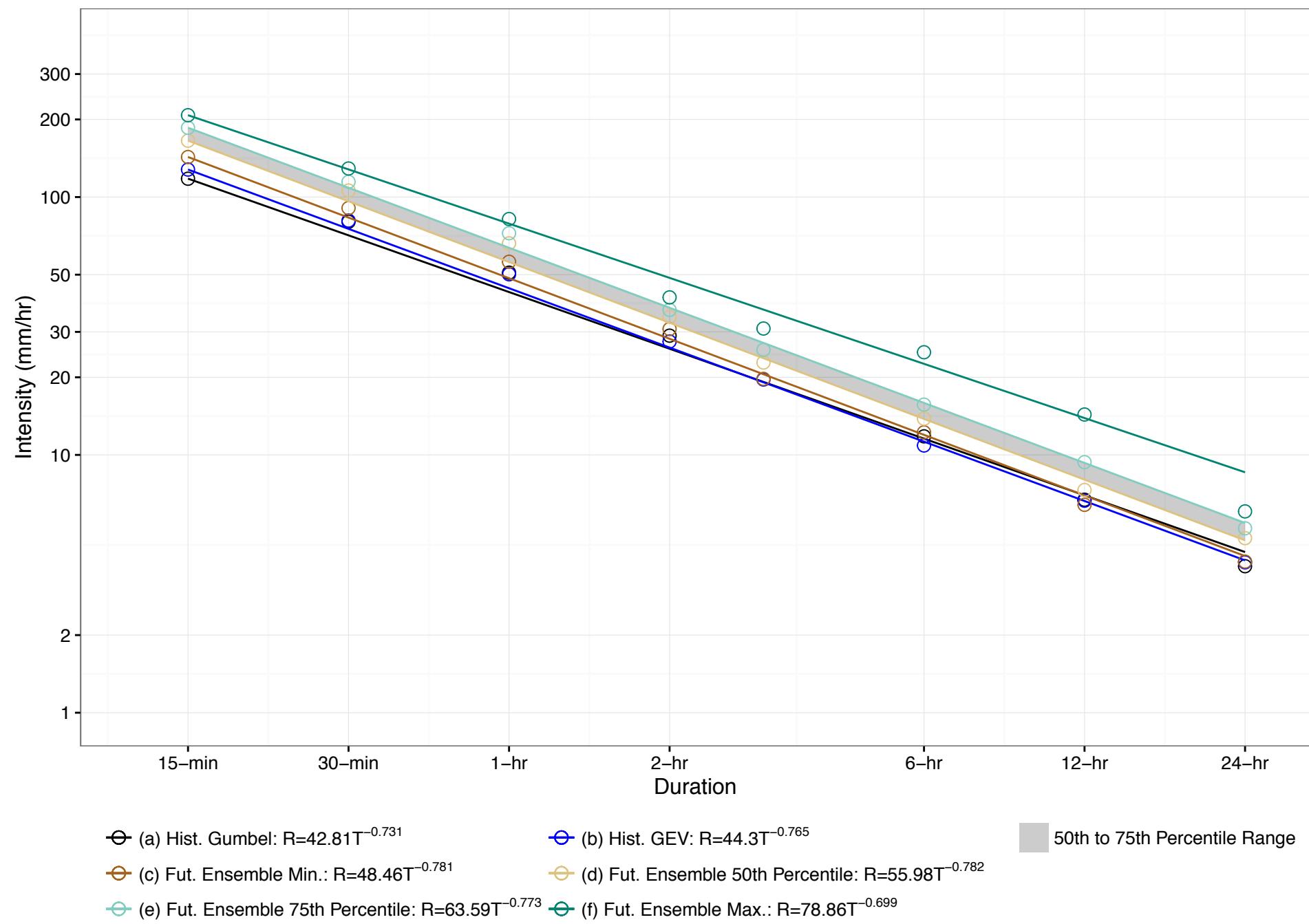


Figure A-47: IDF Curve Comparison for Windsor Airport, 2090s 50-year Return Period Event (50th–75th Percentile)

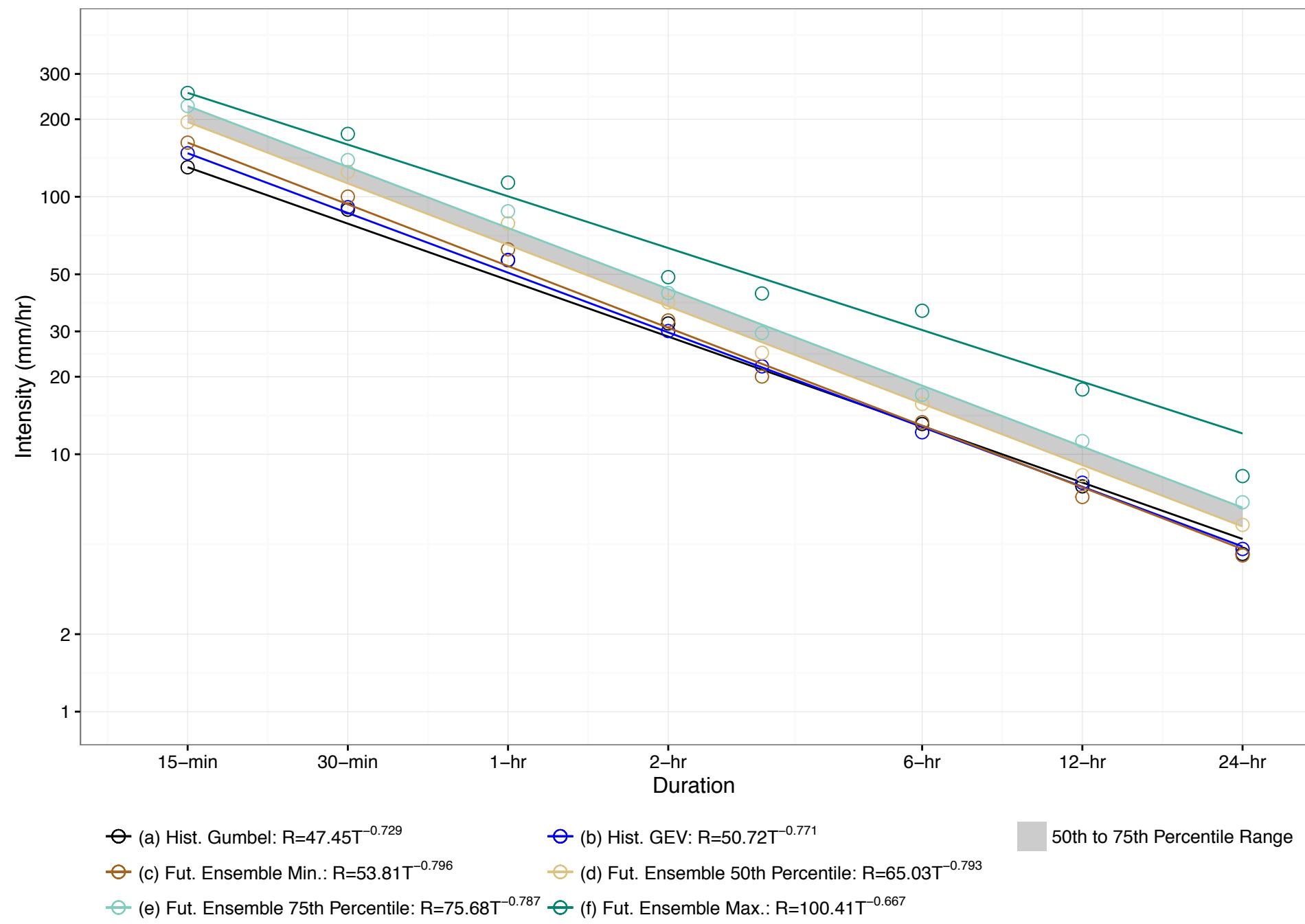
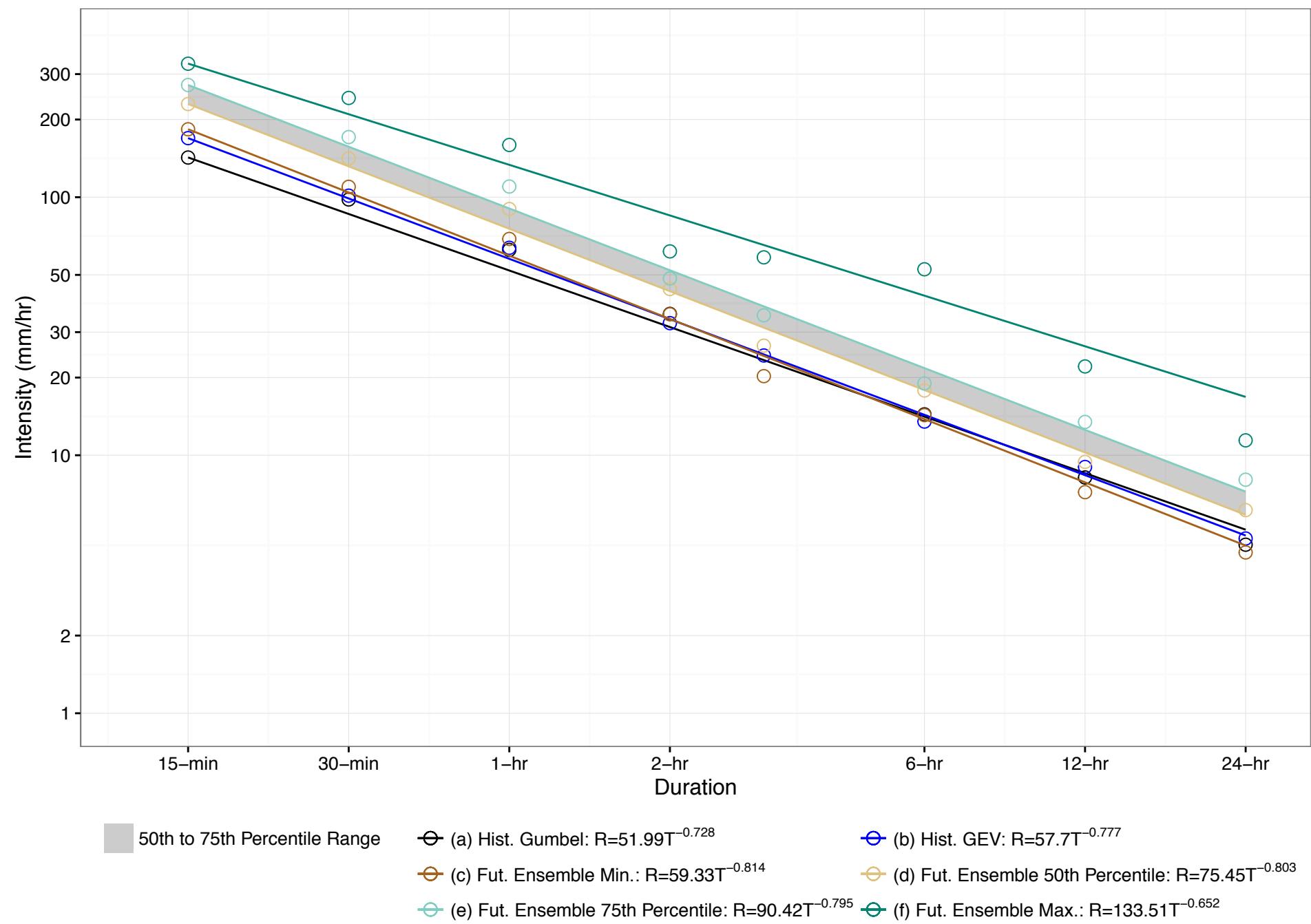


Figure A-48: IDF Curve Comparison for Windsor Airport, 2090s 100-year Return Period Event (50th–75th Percentile)



# A Comparison of IDF Curves for Southern

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Addendum – Appendix B: IDF Statistics and Curve  
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**1. PEARSON AIRPORT      2030S 2-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	60.9	63.26	57.1	72.548	59.1915	66.968	69.63625	72.4594	12
0.5	40.3	41.959	37.768	48.23	39.2608	44.448	46.318	48.1054	12
1	23.3	23.823	21.577	27.321	22.2911	25.203	26.0755	27.22	12
3	NA	9.353	5.829	10.727	5.8735	9.8085	10.17275	10.442	12
2	13.7	13.742	12.471	15.76	12.8585	14.5385	14.96275	15.736	12
6	6	5.513	5.269	6.515	5.3253	5.5465	5.83575	6.3573	12
12	3.5	3.039	2.915	3.832	2.9368	3.251	3.3435	3.7209	12
24	2	1.827	1.691	2.095	1.7237	1.9135	1.97375	2.0294	12

Model info for (a) Hist. Gumbel: R=22.05T^-0.733

	Estimate	Std. Error	t value	Pr(> t )
A	22.046	2.75E-01	80.05	5.76E-09
B	0.7332	8.97E-03	81.78	5.18E-09

Model info for (b) Hist. GEV: R=21.78T^-0.769

	Estimate	Std. Error	t value	Pr(> t )
A	21.783	3.58E-01	60.78	1.33E-09
B	0.7694	1.18E-02	65.04	8.88E-10

Model info for (c) Fut. EnsembleMin.: R=19.97T^-0.758

	Estimate	Std. Error	t value	Pr(> t )
A	19.974	3.43E-01	58.22	1.73E-09
B	0.7580	1.23E-02	61.41	1.25E-09

Model info for (d) Fut. Ensemble10thPercentile: R=20.52T^-0.764

	Estimate	Std. Error	t value	Pr(> t )
A	20.525	3.73E-01	55.07	2.41E-09
B	0.7643	1.31E-02	58.56	1.67E-09

Model info for (e) Fut. Ensemble90thPercentile: R=25.12T^-0.765

	Estimate	Std. Error	t value	Pr(> t )
A	25.117	3.92E-01	63.99	9.79E-10
B	0.7646	1.12E-02	68.07	6.76E-10

Model info for (f) Fut. EnsembleMax.: R=25.38T^-0.758

	Estimate	Std. Error	t value	Pr(> t )
A	25.381	3.75E-01	67.60	7.05E-10
B	0.7579	1.06E-02	71.30	5.12E-10

## 2. PEARSON AIRPORT 2030S 5-YEAR EVENT

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	81.7	83.978	71.436	90.895	74.1773	84.875	88.63775	89.8709	12
0.5	55.2	55.997	47.51	60.656	49.4616	56.591	59.104	59.9728	12
1	33.1	31.558	26.841	34.23	27.8755	31.897	33.31	33.7987	12
3	NA	11.944	7.478	12.946	7.7377	11.7465	12.291	12.5145	12
2	19.9	18.426	15.513	20.204	16.2756	18.622	19.4495	19.8776	12
6	8.7	7.467	6.886	7.871	7.1598	7.583	7.7355	7.8357	12
12	4.9	4.035	3.739	4.4	3.8693	4.213	4.2495	4.3767	12
24	2.8	2.333	2.007	2.563	2.0607	2.3585	2.4685	2.539	12

Model info for (a) Hist. Gumbel: R=30.29T^-0.716

	Estimate	Std. Error	t value	Pr(> t )
A	30.286	4.77E-01	63.46	1.84E-08
B	0.7162	1.13E-02	63.38	1.85E-08

Model info for (b) Hist. GEV: R=28.96T^-0.768

	Estimate	Std. Error	t value	Pr(> t )
A	28.956	5.08E-01	56.96	1.97E-09
B	0.7684	1.26E-02	60.89	1.32E-09

Model info for (c) Fut. EnsembleMin.: R=25.18T^-0.752

	Estimate	Std. Error	t value	Pr(> t )
A	25.184	4.69E-01	53.68	2.81E-09
B	0.7524	1.34E-02	56.21	2.13E-09

Model info for (d) Fut. Ensemble10thPercentile: R=26.14T^-0.753

	Estimate	Std. Error	t value	Pr(> t )
A	26.137	5.03E-01	51.98	3.40E-09
B	0.7528	1.38E-02	54.46	2.57E-09

Model info for (e) Fut. Ensemble90thPercentile: R=30.96T^-0.769

	Estimate	Std. Error	t value	Pr(> t )
A	30.956	5.31E-01	58.27	1.72E-09
B	0.7692	1.23E-02	62.34	1.15E-09

Model info for (f) Fut. EnsembleMax.: R=31.26T^-0.77

	Estimate	Std. Error	t value	Pr(> t )
A	31.256	5.43E-01	57.55	1.85E-09
B	0.7704	1.25E-02	61.66	1.22E-09

### 3. PEARSON AIRPORT 2030S 10-YEAR EVENT

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	95.4	96.121	80.781	102.977	82.2086	96.672	101.28525	102.7176	12
0.5	65.1	64.171	53.831	68.748	54.8831	64.532	67.622	68.5589	12
1	39.6	36.266	30.366	39.053	31.0168	36.458	38.356	38.8423	12
3	NA	14.069	8.691	15.002	9.2308	12.903	14.319	14.6688	12
2	24	21.585	17.708	24.058	18.4604	21.6545	23.09025	23.385	12
6	10.5	9.037	8.077	10.199	8.5019	9.2045	9.6695	9.7715	12
12	5.9	4.833	4.346	5.013	4.6057	4.832	4.9165	4.99	12
24	3.3	2.748	2.256	3.302	2.3498	2.752	2.9575	3.0277	12

Model info for (a) Hist. Gumbel: R=35.76T^-0.708

	Estimate	Std. Error	t value	Pr(> t )
A	35.755	6.21E-01	57.61	2.98E-08
B	0.7083	1.24E-02	56.93	3.16E-08

Model info for (b) Hist. GEV: R=33.71T^-0.756

	Estimate	Std. Error	t value	Pr(> t )
A	33.710	5.72E-01	58.93	1.60E-09
B	0.7562	1.22E-02	62.02	1.18E-09

Model info for (c) Fut. EnsembleMin.: R=28.76T^-0.745

	Estimate	Std. Error	t value	Pr(> t )
A	28.755	5.59E-01	51.44	3.62E-09
B	0.7454	1.40E-02	53.39	2.90E-09

Model info for (d) Fut. Ensemble10thPercentile: R=29.63T^-0.736

	Estimate	Std. Error	t value	Pr(> t )
A	29.631	5.73E-01	51.70	3.51E-09
B	0.7364	1.39E-02	53.04	3.02E-09

Model info for (e) Fut. Ensemble90thPercentile: R=36.03T^-0.756

	Estimate	Std. Error	t value	Pr(> t )
A	36.028	6.53E-01	55.17	2.38E-09
B	0.7561	1.30E-02	58.06	1.75E-09

Model info for (f) Fut. EnsembleMax.: R=36.58T^-0.747

	Estimate	Std. Error	t value	Pr(> t )
A	36.584	6.83E-01	53.59	2.83E-09
B	0.7469	1.34E-02	55.72	2.24E-09

## 4. PEARSON AIRPORT      2030S 25-YEAR EVENT

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	112.8	109.876	79.117	119.803	90.5547	110.3445	115.986	117.609	12
0.5	77.6	73.377	52.836	80.007	60.4327	73.6905	77.4485	78.4169	12
1	47.7	41.779	30.084	45.554	34.0814	41.9045	44.35475	45.4199	12
3	NA	17.331	10.377	19.491	11.4802	14.623	16.865	17.8817	12
2	29.2	25.642	18.464	30.151	20.0706	25.589	27.75625	28.1335	12
6	12.7	11.401	9.428	15.14	9.5281	12.252	13.07675	13.4666	12
12	7.1	6.031	5.094	6.566	5.1394	5.79	6.21175	6.2509	12
24	4	3.385	2.437	4.862	2.5377	3.3495	3.71225	3.8921	12

Model info for (a) Hist. Gumbel: R=42.63T^-0.702

	Estimate	Std. Error	t value	Pr(> t )
A	42.630	7.78E-01	54.79	3.83E-08
B	0.7023	1.31E-02	53.71	4.23E-08

Model info for (b) Hist. GEV: R=39.8T^-0.733

	Estimate	Std. Error	t value	Pr(> t )
A	39.800	6.51E-01	61.16	1.28E-09
B	0.7329	1.17E-02	62.44	1.13E-09

Model info for (c) Fut. EnsembleMin.: R=29.88T^-0.703

	Estimate	Std. Error	t value	Pr(> t )
A	29.880	6.41E-01	46.61	6.53E-09
B	0.7027	1.54E-02	45.72	7.34E-09

Model info for (d) Fut. Ensemble10thPercentile: R=32.77T^-0.734

	Estimate	Std. Error	t value	Pr(> t )
A	32.771	6.41E-01	51.14	3.75E-09
B	0.7335	1.40E-02	52.26	3.29E-09

Model info for (e) Fut. Ensemble90thPercentile: R=43.41T^-0.719

	Estimate	Std. Error	t value	Pr(> t )
A	43.408	9.63E-01	45.06	8.00E-09
B	0.7193	1.59E-02	45.19	7.86E-09

Model info for (f) Fut. EnsembleMax.: R=45.77T^-0.694

	Estimate	Std. Error	t value	Pr(> t )
A	45.767	1.14E+00	40.25	1.57E-08
B	0.6945	1.78E-02	39.03	1.89E-08

## 5. PEARSON AIRPORT 2030S 50-YEAR EVENT

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	125.7	119.047	75.087	131.887	93.0861	119.5095	127.30225	127.9543	12
0.5	86.8	79.481	50.131	88.053	62.1309	79.799	84.95075	85.2788	12
1	53.8	45.578	28.748	50.494	35.0812	45.668	48.859	50.1025	12
3	NA	20.252	11.747	24.166	12.8242	17.5155	18.869	21.1451	12
2	33.1	28.7	18.102	35.383	20.7767	28.546	31.21925	32.2172	12
6	14.4	13.478	10.091	20.852	10.2833	15.2365	16.435	17.6938	12
12	8	7.082	5.321	8.289	5.4622	6.646	7.3255	7.5343	12
24	4.5	3.956	2.495	6.709	2.6385	3.875	4.403	4.7693	12

Model info for (a) Hist. Gumbel: R=47.76T^-0.698

	Estimate	Std. Error	t value	Pr(> t )
A	47.761	9.08E-01	52.58	4.70E-08
B	0.6985	1.36E-02	51.28	5.33E-08

Model info for (b) Hist. GEV: R=44.42T^-0.711

	Estimate	Std. Error	t value	Pr(> t )
A	44.418	7.39E-01	60.09	1.43E-09
B	0.7115	1.19E-02	59.63	1.49E-09

Model info for (c) Fut. EnsembleMin.: R=29.46T^-0.675

	Estimate	Std. Error	t value	Pr(> t )
A	29.459	7.27E-01	40.54	1.51E-08
B	0.6753	1.76E-02	38.29	2.12E-08

Model info for (d) Fut. Ensemble10thPercentile: R=34.15T^-0.724

	Estimate	Std. Error	t value	Pr(> t )
A	34.154	7.09E-01	48.14	5.39E-09
B	0.7236	1.49E-02	48.55	5.12E-09

Model info for (e) Fut. Ensemble90thPercentile: R=49.83T^-0.681

	Estimate	Std. Error	t value	Pr(> t )
A	49.833	1.48E+00	33.59	4.64E-08
B	0.6806	2.13E-02	31.95	6.25E-08

Model info for (f) Fut. EnsembleMax.: R=54.11T^-0.643

	Estimate	Std. Error	t value	Pr(> t )
A	54.115	1.77E+00	30.66	8.00E-08
B	0.6429	2.33E-02	27.65	1.48E-07

## 6. PEARSON AIRPORT 2030S 100-YEAR EVENT

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	138.6	127.364	70.24	143.593	95.1162	128.125	137.645	138.3842	12
0.5	96	84.99	46.871	95.819	63.4852	85.517	91.58275	92.2345	12
1	59.8	49.12	27.089	55.379	35.9051	49.2905	53.4575	54.6659	12
3	NA	23.656	13.046	30.372	13.259	20.9435	21.211	25.1686	12
2	36.9	31.778	17.525	41.265	21.3852	31.584	34.82125	36.5803	12
6	16.1	15.861	10.729	29.145	11.019	19.0065	20.762	23.6999	12
12	8.9	8.286	5.516	10.572	5.7515	7.586	8.62775	9.1292	12
24	5	4.62	2.548	9.447	2.7347	4.4895	5.2305	5.8782	12

Model info for (a) Hist. Gumbel: R=52.89T^-0.695

	Estimate	Std. Error	t value	Pr(> t )
A	52.886	1.04E+00	51.08	5.44E-08
B	0.6954	1.40E-02	49.60	6.29E-08

Model info for (b) Hist. GEV: R=49.11T^-0.688

	Estimate	Std. Error	t value	Pr(> t )
A	49.112	8.74E-01	56.18	2.14E-09
B	0.6877	1.27E-02	53.98	2.72E-09

Model info for (c) Fut. EnsembleMin.: R=28.71T^-0.646

	Estimate	Std. Error	t value	Pr(> t )
A	28.708	8.32E-01	34.49	3.95E-08
B	0.6458	2.07E-02	31.24	7.15E-08

Model info for (d) Fut. Ensemble10thPercentile: R=35.35T^-0.714

	Estimate	Std. Error	t value	Pr(> t )
A	35.354	7.99E-01	44.23	8.94E-09
B	0.7142	1.62E-02	44.06	9.15E-09

Model info for (e) Fut. Ensemble90thPercentile: R=57.27T^-0.637

	Estimate	Std. Error	t value	Pr(> t )
A	57.272	2.32E+00	24.67	2.92E-07
B	0.6368	2.89E-02	22.05	5.68E-07

Model info for (f) Fut. EnsembleMax.: R=63.91T^-0.584

	Estimate	Std. Error	t value	Pr(> t )
A	63.910	2.69E+00	23.77	3.64E-07
B	0.5843	2.98E-02	19.64	1.13E-06

## 7. PEARSON AIRPORT      2050S 2-YEAR EVENT

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	60.9	68.348	67.052	86.748	67.4223	75.897	77.6795	83.15	8
0.5	40.3	45.412	44.55	57.687	44.7593	50.407	51.6015	55.2615	8
1	23.3	25.425	24.943	32.367	24.9745	28.539	29.1595	30.9607	8
3	NA	9.66	9.406	11.581	9.4557	10.9025	11.208	11.3787	8
2	13.7	14.337	13.951	18.633	14.0308	16.4935	16.72225	17.5732	8
6	6	5.773	5.572	6.9	5.5804	6.4535	6.7395	6.8013	8
12	3.5	3.149	2.883	3.816	2.8935	3.55	3.7315	3.7579	8
24	2	1.887	1.837	2.237	1.8468	2.114	2.18925	2.2146	8

Model info for (a) Hist. Gumbel: R=22.05T^-0.733

	Estimate	Std. Error	t value	Pr(> t )
A	22.046	2.75E-01	80.05	5.76E-09
B	0.7332	8.97E-03	81.78	5.18E-09

Model info for (b) Hist. GEV: R=23.22T^-0.779

	Estimate	Std. Error	t value	Pr(> t )
A	23.218	4.14E-01	56.12	2.15E-09
B	0.7792	1.28E-02	60.79	1.33E-09

Model info for (c) Fut. EnsembleMin.: R=22.53T^-0.787

	Estimate	Std. Error	t value	Pr(> t )
A	22.535	4.52E-01	49.85	4.37E-09
B	0.7869	1.44E-02	54.53	2.55E-09

Model info for (d) Fut. Ensemble10thPercentile: R=22.64T^-0.788

	Estimate	Std. Error	t value	Pr(> t )
A	22.635	4.51E-01	50.15	4.22E-09
B	0.7877	1.43E-02	54.91	2.45E-09

Model info for (e) Fut. Ensemble90thPercentile: R=27.97T^-0.786

	Estimate	Std. Error	t value	Pr(> t )
A	27.973	5.32E-01	52.62	3.16E-09
B	0.7862	1.37E-02	57.50	1.86E-09

Model info for (f) Fut. EnsembleMax.: R=28.91T^-0.793

	Estimate	Std. Error	t value	Pr(> t )
A	28.912	5.95E-01	48.60	5.09E-09
B	0.7930	1.48E-02	53.56	2.84E-09

## 8. PEARSON AIRPORT      2050S 5-YEAR EVENT

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	81.7	89.045	86.554	104.818	86.792	89.266	94.2195	103.7484	8
0.5	55.2	59.234	57.578	69.727	57.7096	59.5475	62.828	69.1355	8
1	33.1	33.288	32.357	39.184	32.3759	33.5595	35.4895	39.1567	8
3	NA	12.588	12.231	14.262	12.2345	12.7125	13.11425	13.7594	8
2	19.9	19.301	18.681	23.621	18.737	19.653	20.6875	22.9903	8
6	8.7	8.047	6.859	8.879	6.8604	8.555	8.7455	8.8559	8
12	4.9	4.357	4.005	4.786	4.0092	4.585	4.641	4.779	8
24	2.8	2.459	2.389	2.911	2.3897	2.483	2.58525	2.7927	8

Model info for (a) Hist. Gumbel: R=30.29T^-0.716

	Estimate	Std. Error	t value	Pr(> t )
A	30.286	4.77E-01	63.46	1.84E-08
B	0.7162	1.13E-02	63.38	1.85E-08

Model info for (b) Hist. GEV: R=30.83T^-0.765

	Estimate	Std. Error	t value	Pr(> t )
A	30.829	5.23E-01	58.99	1.59E-09
B	0.7655	1.22E-02	62.82	1.09E-09

Model info for (c) Fut. EnsembleMin.: R=29.11T^-0.786

	Estimate	Std. Error	t value	Pr(> t )
A	29.114	5.64E-01	51.63	3.54E-09
B	0.7863	1.39E-02	56.43	2.08E-09

Model info for (d) Fut. Ensemble10thPercentile: R=29.17T^-0.787

	Estimate	Std. Error	t value	Pr(> t )
A	29.169	5.65E-01	51.60	3.55E-09
B	0.7869	1.39E-02	56.44	2.08E-09

Model info for (e) Fut. Ensemble90thPercentile: R=35.29T^-0.778

	Estimate	Std. Error	t value	Pr(> t )
A	35.287	6.79E-01	51.96	3.41E-09
B	0.7783	1.38E-02	56.23	2.13E-09

Model info for (f) Fut. EnsembleMax.: R=35.63T^-0.779

	Estimate	Std. Error	t value	Pr(> t )
A	35.634	6.73E-01	52.92	3.06E-09
B	0.7786	1.36E-02	57.29	1.90E-09

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**9. PEARSON AIRPORT      2050S 10-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	95.4	100.668	91.542	115.42	92.9861	96.9715	100.958	112.3694	8
0.5	65.1	67.113	61.114	76.947	62.0772	64.6985	67.35025	75.0388	8
1	39.6	38.089	34.538	43.67	35.0357	36.6465	38.346	42.9294	8
3	NA	15.23	13.398	16.113	13.4526	14.417	15.20425	15.8764	8
2	24	22.873	20.556	26.652	20.7471	21.9045	23.23625	26.3531	8
6	10.5	9.89	7.494	11.388	7.5136	9.8855	10.36975	11.1115	8
12	5.9	5.341	4.98	6.012	5.0157	5.204	5.393	5.9546	8
24	3.3	2.975	2.617	3.416	2.6275	2.816	3.00825	3.2907	8

Model info for (a) Hist. Gumbel: R=35.76T^-0.708

	Estimate	Std. Error	t value	Pr(> t )
A	35.755	6.21E-01	57.61	2.98E-08
B	0.7083	1.24E-02	56.93	3.16E-08

Model info for (b) Hist. GEV: R=35.87T^-0.745

	Estimate	Std. Error	t value	Pr(> t )
A	35.869	5.71E-01	62.83	1.09E-09
B	0.7447	1.14E-02	65.15	8.79E-10

Model info for (c) Fut. EnsembleMin.: R=31.65T^-0.766

	Estimate	Std. Error	t value	Pr(> t )
A	31.648	5.92E-01	53.48	2.87E-09
B	0.7665	1.34E-02	57.02	1.95E-09

Model info for (d) Fut. Ensemble10thPercentile: R=32.02T^-0.769

	Estimate	Std. Error	t value	Pr(> t )
A	32.019	6.17E-01	51.90	3.43E-09
B	0.7694	1.39E-02	55.54	2.29E-09

Model info for (e) Fut. Ensemble90thPercentile: R=40.07T^-0.744

	Estimate	Std. Error	t value	Pr(> t )
A	40.067	6.84E-01	58.56	1.67E-09
B	0.7442	1.23E-02	60.68	1.35E-09

Model info for (f) Fut. EnsembleMax.: R=41.06T^-0.746

	Estimate	Std. Error	t value	Pr(> t )
A	41.062	6.95E-01	59.08	1.58E-09
B	0.7459	1.22E-02	61.35	1.26E-09

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**10. PEARSON AIRPORT      2050S 25-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	112.8	113.345	90.269	123.839	95.736	105.9015	111.878	119.9687	8
0.5	77.6	75.818	60.284	82.837	63.9345	70.8165	74.8675	80.3359	8
1	47.7	43.729	34.324	47.777	36.2931	40.6285	43.27475	46.5989	8
3	NA	19.66	14.239	20.082	14.4287	17.0855	19.12525	19.606	8
2	29.2	27.74	21.066	30.308	21.8451	25.222	28.01725	30.2317	8
6	12.7	12.693	8.098	15.692	8.1498	11.7515	12.836	14.7596	8
12	7.1	6.843	6.035	8.054	6.0511	6.319	6.991	7.8685	8
24	4	3.84	2.781	4.131	2.8181	3.385	3.934	4.0183	8

Model info for (a) Hist. Gumbel: R=42.63T^-0.702

	Estimate	Std. Error	t value	Pr(> t )
A	42.630	7.78E-01	54.79	3.83E-08
B	0.7023	1.31E-02	53.71	4.23E-08

Model info for (b) Hist. GEV: R=42.35T^-0.711

	Estimate	Std. Error	t value	Pr(> t )
A	42.345	6.44E-01	65.76	8.32E-10
B	0.7105	1.09E-02	65.18	8.77E-10

Model info for (c) Fut. EnsembleMin.: R=32.69T^-0.733

	Estimate	Std. Error	t value	Pr(> t )
A	32.694	6.60E-01	49.52	4.55E-09
B	0.7328	1.45E-02	50.56	4.02E-09

Model info for (d) Fut. Ensemble10thPercentile: R=34.03T^-0.746

	Estimate	Std. Error	t value	Pr(> t )
A	34.025	7.21E-01	47.21	6.05E-09
B	0.7465	1.52E-02	49.07	4.80E-09

Model info for (e) Fut. Ensemble90thPercentile: R=45.98T^-0.692

	Estimate	Std. Error	t value	Pr(> t )
A	45.977	9.01E-01	51.03	3.80E-09
B	0.6922	1.40E-02	49.33	4.65E-09

Model info for (f) Fut. EnsembleMax.: R=47.63T^-0.69

	Estimate	Std. Error	t value	Pr(> t )
A	47.634	1.05E+00	45.55	7.50E-09
B	0.6895	1.57E-02	43.87	9.39E-09

## 11. PEARSON AIRPORT      2050S 50-YEAR EVENT

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	125.7	121.488	86.98	126.943	94.0948	111.341	118.78425	123.6894	8
0.5	86.8	81.482	58.071	85.141	62.8219	74.5825	79.6815	82.9941	8
1	53.8	47.626	33.301	49.764	36.0247	43.251	46.61925	48.6384	8
3	NA	23.973	14.797	25.416	15.0518	18.587	22.9285	23.8711	8
2	33.1	31.624	20.969	33.044	22.3424	27.7225	31.772	32.7605	8
6	14.4	15.177	8.424	19.964	8.5059	13.2845	15.0345	18.1881	8
12	8	8.181	6.705	10.025	6.7197	7.414	8.64675	9.6771	8
24	4.5	4.682	2.89	4.964	2.9397	3.9035	4.6335	4.7946	8

Model info for (a) Hist. Gumbel: R=47.76T^-0.698

	Estimate	Std. Error	t value	Pr(> t )
A	47.761	9.08E-01	52.58	4.70E-08
B	0.6985	1.36E-02	51.28	5.33E-08

Model info for (b) Hist. GEV: R=47.28T^-0.681

	Estimate	Std. Error	t value	Pr(> t )
A	47.279	7.33E-01	64.53	9.31E-10
B	0.6811	1.11E-02	61.43	1.25E-09

Model info for (c) Fut. EnsembleMin.: R=32.68T^-0.706

	Estimate	Std. Error	t value	Pr(> t )
A	32.685	7.43E-01	43.98	9.25E-09
B	0.7062	1.63E-02	43.34	1.01E-08

Model info for (d) Fut. Ensemble10thPercentile: R=34.47T^-0.725

	Estimate	Std. Error	t value	Pr(> t )
A	34.474	8.00E-01	43.11	1.04E-08
B	0.7245	1.66E-02	43.53	9.83E-09

Model info for (e) Fut. Ensemble90thPercentile: R=50.42T^-0.648

	Estimate	Std. Error	t value	Pr(> t )
A	50.416	1.19E+00	42.20	1.18E-08
B	0.6477	1.69E-02	38.32	2.11E-08

Model info for (f) Fut. EnsembleMax.: R=52.45T^-0.638

	Estimate	Std. Error	t value	Pr(> t )
A	52.452	1.50E+00	35.03	3.60E-08
B	0.6379	2.03E-02	31.37	6.98E-08

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**12. PEARSON AIRPORT      2050S 100-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	138.6	128.644	82.45	127.793	91.0418	115.9165	124.79675	126.0962	8
0.5	96	86.515	55.019	85.942	60.752	77.7815	83.91525	84.7674	8
1	59.8	51.269	31.798	50.93	35.1118	45.6135	49.707	50.1726	8
3	NA	29.376	15.314	32.559	15.6003	20.0955	27.38525	29.6855	8
2	36.9	35.727	20.572	36.062	22.6328	30.258	35.05725	35.6616	8
6	16.1	18.047	8.658	25.4	8.7749	14.9465	17.571	22.3536	8
12	8.9	9.731	7.41	12.473	7.4128	8.709	10.6815	11.8836	8
24	5	5.737	2.991	6.359	3.047	4.405	5.41375	5.7976	8

Model info for (a) Hist. Gumbel: R=52.89T^-0.695

	Estimate	Std. Error	t value	Pr(> t )
A	52.886	1.04E+00	51.08	5.44E-08
B	0.6954	1.40E-02	49.60	6.29E-08

Model info for (b) Hist. GEV: R=52.32T^-0.649

	Estimate	Std. Error	t value	Pr(> t )
A	52.321	8.64E-01	60.55	1.36E-09
B	0.6493	1.18E-02	55.11	2.40E-09

Model info for (c) Fut. EnsembleMin.: R=32.27T^-0.677

	Estimate	Std. Error	t value	Pr(> t )
A	32.265	8.66E-01	37.27	2.49E-08
B	0.6769	1.92E-02	35.27	3.46E-08

Model info for (d) Fut. Ensemble10thPercentile: R=34.49T^-0.7

	Estimate	Std. Error	t value	Pr(> t )
A	34.491	9.13E-01	37.76	2.30E-08
B	0.7003	1.90E-02	36.91	2.64E-08

Model info for (e) Fut. Ensemble90thPercentile: R=54.9T^-0.6

	Estimate	Std. Error	t value	Pr(> t )
A	54.903	1.58E+00	34.84	3.72E-08
B	0.6002	2.03E-02	29.50	1.01E-07

Model info for (f) Fut. EnsembleMax.: R=57.29T^-0.579

	Estimate	Std. Error	t value	Pr(> t )
A	57.286	2.000E+00	28.69	1.19E-07
B	0.5793	2.46E-02	23.52	3.87E-07

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**13. PEARSON AIRPORT      2090S 2-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	60.9	63.26	72.97	104.028	73.6188	84.344	88.085	91.8923	12
0.5	40.3	41.959	48.4	69.527	48.8534	56.0945	58.807	60.9868	12
1	23.3	23.823	27.48	39.209	27.706	31.2065	32.56175	34.6016	12
3	NA	9.353	6.899	13.788	7.1504	11.3865	12.5755	13.531	12
2	13.7	13.742	15.852	23.303	15.8707	18.091	18.869	19.9937	12
6	6	5.513	6.257	8.938	6.5444	6.9655	7.26425	7.8974	12
12	3.5	3.039	3.45	4.471	3.5756	3.88	4.0695	4.1697	12
24	2	1.827	2.107	2.662	2.1134	2.377	2.46675	2.4783	12

Model info for (a) Hist. Gumbel: R=22.05T^-0.733

	Estimate	Std. Error	t value	Pr(> t )
A	22.046	2.75E-01	80.05	5.76E-09
B	0.7332	8.97E-03	81.78	5.18E-09

Model info for (b) Hist. GEV: R=21.78T^-0.769

	Estimate	Std. Error	t value	Pr(> t )
A	21.783	3.58E-01	60.78	1.33E-09
B	0.7694	1.18E-02	65.04	8.88E-10

Model info for (c) Fut. EnsembleMin.: R=24.94T^-0.775

	Estimate	Std. Error	t value	Pr(> t )
A	24.940	4.92E-01	50.74	3.93E-09
B	0.7747	1.42E-02	54.66	2.52E-09

Model info for (d) Fut. Ensemble10thPercentile: R=25.39T^-0.768

	Estimate	Std. Error	t value	Pr(> t )
A	25.388	4.80E-01	52.94	3.05E-09
B	0.7683	1.36E-02	56.57	2.05E-09

Model info for (e) Fut. Ensemble90thPercentile: R=31.25T^-0.778

	Estimate	Std. Error	t value	Pr(> t )
A	31.255	5.90E-01	52.95	3.05E-09
B	0.7783	1.36E-02	57.30	1.90E-09

Model info for (f) Fut. EnsembleMax.: R=35.08T^-0.784

	Estimate	Std. Error	t value	Pr(> t )
A	35.083	7.88E-01	44.52	8.60E-09
B	0.7845	1.62E-02	48.55	5.12E-09

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**14. PEARSON AIRPORT      2090S 5-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	81.7	83.978	96.203	124.688	97.9114	108.6535	112.35625	114.1324	12
0.5	55.2	55.997	64.149	83.27	65.3772	72.451	74.92025	76.166	12
1	33.1	31.558	36.153	47.798	36.9634	40.8315	42.34725	42.4389	12
3	NA	11.944	9.069	16.728	9.8106	14.8245	15.111	15.6267	12
2	19.9	18.426	21.108	30.317	22.0957	23.3415	24.6525	24.7248	12
6	8.7	7.467	8.392	11.288	8.8808	9.2645	10.02975	10.1616	12
12	4.9	4.035	4.535	5.71	4.9057	5.143	5.31025	5.5825	12
24	2.8	2.333	2.67	3.13	2.6905	2.9595	3.11275	3.127	12

Model info for (a) Hist. Gumbel: R=30.29T^-0.716

	Estimate	Std. Error	t value	Pr(> t )
A	30.286	4.77E-01	63.46	1.84E-08
B	0.7162	1.13E-02	63.38	1.85E-08

Model info for (b) Hist. GEV: R=28.96T^-0.768

	Estimate	Std. Error	t value	Pr(> t )
A	28.956	5.08E-01	56.96	1.97E-09
B	0.7684	1.26E-02	60.89	1.32E-09

Model info for (c) Fut. EnsembleMin.: R=32.91T^-0.774

	Estimate	Std. Error	t value	Pr(> t )
A	32.906	6.78E-01	48.56	5.11E-09
B	0.7742	1.48E-02	52.29	3.28E-09

Model info for (d) Fut. Ensemble10thPercentile: R=33.96T^-0.764

	Estimate	Std. Error	t value	Pr(> t )
A	33.959	6.66E-01	50.98	3.82E-09
B	0.7642	1.41E-02	54.20	2.65E-09

Model info for (e) Fut. Ensemble90thPercentile: R=39.38T^-0.768

	Estimate	Std. Error	t value	Pr(> t )
A	39.383	6.79E-01	58.02	1.76E-09
B	0.7679	1.24E-02	61.98	1.19E-09

Model info for (f) Fut. EnsembleMax.: R=42.76T^-0.772

	Estimate	Std. Error	t value	Pr(> t )
A	42.757	9.79E-01	43.68	9.64E-09
B	0.7725	1.65E-02	46.92	6.28E-09

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**15. PEARSON AIRPORT      2090S 10-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	95.4	96.121	106.278	139.475	107.7853	119.9855	130.59425	135.8939	12
0.5	65.1	64.171	70.993	93.115	71.9816	80.103	87.06475	90.4696	12
1	39.6	36.266	40.26	52.634	40.8861	45.2695	50.741	52.5269	12
3	NA	14.069	10.685	18.174	11.9838	16.2985	17.332	18.1573	12
2	24	21.585	24.385	34.322	24.8809	27.099	28.94225	31.3169	12
6	10.5	9.037	9.801	13.729	10.0302	11.382	11.776	12.4174	12
12	5.9	4.833	5.342	6.714	5.7295	6.116	6.35325	6.5112	12
24	3.3	2.748	3.156	3.987	3.1574	3.4155	3.5625	3.9315	12

Model info for (a) Hist. Gumbel: R=35.76T^-0.708

	Estimate	Std. Error	t value	Pr(> t )
A	35.755	6.21E-01	57.61	2.98E-08
B	0.7083	1.24E-02	56.93	3.16E-08

Model info for (b) Hist. GEV: R=33.71T^-0.756

	Estimate	Std. Error	t value	Pr(> t )
A	33.710	5.72E-01	58.93	1.60E-09
B	0.7562	1.22E-02	62.02	1.18E-09

Model info for (c) Fut. EnsembleMin.: R=37.15T^-0.759

	Estimate	Std. Error	t value	Pr(> t )
A	37.151	6.99E-01	53.14	2.98E-09
B	0.7585	1.35E-02	56.09	2.16E-09

Model info for (d) Fut. Ensemble10thPercentile: R=37.97T^-0.753

	Estimate	Std. Error	t value	Pr(> t )
A	37.970	6.52E-01	58.23	1.72E-09
B	0.7529	1.23E-02	61.02	1.30E-09

Model info for (e) Fut. Ensemble90thPercentile: R=47.21T^-0.763

	Estimate	Std. Error	t value	Pr(> t )
A	47.214	8.76E-01	53.90	2.74E-09
B	0.7630	1.33E-02	57.21	1.92E-09

Model info for (f) Fut. EnsembleMax.: R=49.11T^-0.753

	Estimate	Std. Error	t value	Pr(> t )
A	49.113	1.05E+00	46.92	6.28E-09
B	0.7533	1.53E-02	49.19	4.73E-09

## 16. PEARSON AIRPORT 2090S 25-YEAR EVENT

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	112.8	109.876	108.202	185.078	109.3135	133.471	150.4405	168.2068	12
0.5	77.6	73.377	72.26	123.599	73.0064	89.1345	100.35225	111.3765	12
1	47.7	41.779	41.143	70.409	41.54	50.855	57.90625	69.4051	12
3	NA	17.331	13.003	23.235	15.1071	17.707	19.487	22.8503	12
2	29.2	25.642	25.25	43.192	25.4642	32.68	35.917	42.6583	12
6	12.7	11.401	10.521	17.105	11.0299	14.4385	15.844	16.0873	12
12	7.1	6.031	6.501	8.509	6.7322	7.3535	8.12175	8.445	12
24	4	3.385	3.333	5.702	3.3911	4.0725	4.55175	5.5413	12

Model info for (a) Hist. Gumbel: R=42.63T^-0.702

	Estimate	Std. Error	t value	Pr(> t )
A	42.630	7.78E-01	54.79	3.83E-08
B	0.7023	1.31E-02	53.71	4.23E-08

Model info for (b) Hist. GEV: R=39.8T^-0.733

	Estimate	Std. Error	t value	Pr(> t )
A	39.800	6.51E-01	61.16	1.28E-09
B	0.7329	1.17E-02	62.44	1.13E-09

Model info for (c) Fut. EnsembleMin.: R=39.1T^-0.735

	Estimate	Std. Error	t value	Pr(> t )
A	39.096	6.02E-01	64.98	8.93E-10
B	0.7346	1.10E-02	66.50	7.78E-10

Model info for (d) Fut. Ensemble10thPercentile: R=39.91T^-0.727

	Estimate	Std. Error	t value	Pr(> t )
A	39.912	5.76E-01	69.30	6.07E-10
B	0.7271	1.04E-02	70.22	5.61E-10

Model info for (e) Fut. Ensemble90thPercentile: R=59.82T^-0.746

	Estimate	Std. Error	t value	Pr(> t )
A	59.820	1.14E+00	52.54	3.19E-09
B	0.7461	1.37E-02	54.58	2.54E-09

Model info for (f) Fut. EnsembleMax.: R=64.35T^-0.762

	Estimate	Std. Error	t value	Pr(> t )
A	64.354	1.30E+00	49.46	4.58E-09
B	0.7624	1.45E-02	52.46	3.22E-09

## 17. PEARSON AIRPORT 2090S 50-YEAR EVENT

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	125.7	119.047	102.288	230.68	110.5183	143.1725	168.6385	197.3539	12
0.5	86.8	79.481	68.292	154.011	73.8	95.423	112.02925	130.0738	12
1	53.8	45.578	39.162	88.381	42.066	54.96	65.945	86.3261	12
3	NA	20.252	14.968	27.887	17.407	20.633	21.5225	27.2399	12
2	33.1	28.7	24.66	55.613	25.95	36.9255	41.16725	54.047	12
6	14.4	13.478	10.557	20.749	11.9137	16.969	19.24425	19.8705	12
12	8	7.082	7.479	10.883	7.5036	8.4165	9.76375	10.4269	12
24	4.5	3.956	3.399	7.665	3.5179	4.703	5.53425	7.3557	12

Model info for (a) Hist. Gumbel: R=47.76T^-0.698

	Estimate	Std. Error	t value	Pr(> t )
A	47.761	9.08E-01	52.58	4.70E-08
B	0.6985	1.36E-02	51.28	5.33E-08

Model info for (b) Hist. GEV: R=44.42T^-0.711

	Estimate	Std. Error	t value	Pr(> t )
A	44.418	7.39E-01	60.09	1.43E-09
B	0.7115	1.19E-02	59.63	1.49E-09

Model info for (c) Fut. EnsembleMin.: R=38.5T^-0.705

	Estimate	Std. Error	t value	Pr(> t )
A	38.498	6.71E-01	57.38	1.88E-09
B	0.7051	1.25E-02	56.45	2.08E-09

Model info for (d) Fut. Ensemble10thPercentile: R=41.4T^-0.709

	Estimate	Std. Error	t value	Pr(> t )
A	41.397	6.33E-01	65.40	8.60E-10
B	0.7086	1.10E-02	64.65	9.21E-10

Model info for (e) Fut. Ensemble90thPercentile: R=71.92T^-0.729

	Estimate	Std. Error	t value	Pr(> t )
A	71.919	1.46E+00	49.21	4.72E-09
B	0.7285	1.46E-02	49.96	4.31E-09

Model info for (f) Fut. EnsembleMax.: R=80.44T^-0.76

	Estimate	Std. Error	t value	Pr(> t )
A	80.445	1.60E+00	50.39	4.10E-09
B	0.7602	1.43E-02	53.31	2.93E-09

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**18. PEARSON AIRPORT      2090S 100-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	138.6	127.364	95.156	289.39	111.2707	149.066	185.25125	231.4334	12
0.5	96	84.99	63.497	193.109	74.2936	99.238	122.81275	151.6399	12
1	59.8	49.12	36.698	111.714	42.4043	58.9805	74.24075	108.0647	12
3	NA	23.656	17.166	33.419	17.7092	22.767	26.83175	32.8193	12
2	36.9	31.778	23.742	72.204	26.2905	41.549	47.3885	69.4514	12
6	16.1	15.861	10.574	26.857	12.7921	19.7445	22.7245	25.0534	12
12	8.9	8.286	8.273	13.999	8.4127	9.434	11.65775	13.1447	12
24	5	4.62	3.452	10.498	3.6232	5.4785	6.72575	9.9362	12

Model info for (a) Hist. Gumbel: R=52.89T^-0.695

	Estimate	Std. Error	t value	Pr(> t )
A	52.886	1.04E+00	51.08	5.44E-08
B	0.6954	1.40E-02	49.60	6.29E-08

Model info for (b) Hist. GEV: R=49.11T^-0.688

	Estimate	Std. Error	t value	Pr(> t )
A	49.112	8.74E-01	56.18	2.14E-09
B	0.6877	1.27E-02	53.98	2.72E-09

Model info for (c) Fut. EnsembleMin.: R=37.36T^-0.675

	Estimate	Std. Error	t value	Pr(> t )
A	37.362	8.25E-01	45.27	7.78E-09
B	0.6745	1.58E-02	42.70	1.10E-08

Model info for (d) Fut. Ensemble10thPercentile: R=42.78T^-0.69

	Estimate	Std. Error	t value	Pr(> t )
A	42.775	7.87E-01	54.34	2.61E-09
B	0.6898	1.32E-02	52.36	3.26E-09

Model info for (e) Fut. Ensemble90thPercentile: R=87.1T^-0.705

	Estimate	Std. Error	t value	Pr(> t )
A	87.096	1.93E+00	45.06	8.00E-09
B	0.7053	1.59E-02	44.35	8.80E-09

Model info for (f) Fut. EnsembleMax.: R=102.36T<sup>-0.75</sup>

	Estimate	Std. Error	t value	Pr(> t )
A	102.355	2.11E+00	48.55	5.12E-09
B	0.7500	1.48E-02	50.69	3.96E-09

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**19. WINDSOR AIRPORT      2030S 2-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	68	66.848	60.821	81.735	60.9707	65.716	68.68025	79.7774	12
0.5	44.4	43.748	39.467	54.073	39.8191	43.1025	44.9945	52.2287	12
1	27.5	26.233	23.547	32.745	23.8644	25.8255	26.99075	31.3229	12
3	NA	11.121	9.966	13.812	10.0497	11.1835	12.028	13.2031	12
2	16.4	15.791	14.2	19.489	14.3616	15.615	16.25425	18.8572	12
6	6.8	6.188	5.456	8.346	5.6576	6.501	6.876	7.9221	12
12	3.9	3.434	3.178	4.9	3.1958	3.5155	3.7845	4.7031	12
24	2.2	2.172	1.946	2.698	1.9625	2.1085	2.1985	2.5645	12

Model info for (a) Hist. Gumbel: R=24.69T^-0.731

	Estimate	Std. Error	t value	Pr(> t )
A	24.693	3.48E-01	71.03	1.05E-08
B	0.7310	1.01E-02	72.35	9.55E-09

Model info for (b) Hist. GEV: R=23.65T^-0.75

	Estimate	Std. Error	t value	Pr(> t )
A	23.652	3.39E-01	69.84	5.80E-10
B	0.7498	1.03E-02	72.89	4.49E-10

Model info for (c) Fut. EnsembleMin.: R=21.41T^-0.754

	Estimate	Std. Error	t value	Pr(> t )
A	21.406	2.77E-01	77.29	3.16E-10
B	0.7535	9.30E-03	81.06	2.37E-10

Model info for (d) Fut. Ensemble10thPercentile: R=21.61T^-0.748

	Estimate	Std. Error	t value	Pr(> t )
A	21.611	2.89E-01	74.66	3.89E-10
B	0.7484	9.62E-03	77.79	3.04E-10

Model info for (e) Fut. Ensemble90thPercentile: R=29T^-0.73

	Estimate	Std. Error	t value	Pr(> t )
A	28.997	3.37E-01	86.15	1.65E-10
B	0.7303	8.33E-03	87.66	1.48E-10

Model info for (f) Fut. EnsembleMax.: R=29.98T^-0.724

	Estimate	Std. Error	t value	Pr(> t )
A	29.984	3.72E-01	80.55	2.47E-10
B	0.7237	8.91E-03	81.25	2.34E-10

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**20. WINDSOR AIRPORT      2030S 5-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	87.9	88.129	75.294	105.986	77.0385	86.3575	88.819	102.4942	12
0.5	58.7	58.08	49.576	68.981	50.7733	56.881	58.48175	67.5263	12
1	36.9	35.31	29.911	42.312	30.8485	34.5805	35.56375	41.0566	12
3	NA	14.351	12.264	16.441	12.3895	14.121	14.92575	15.8439	12
2	21.5	20.773	17.876	24.499	18.1737	20.316	20.89675	23.8576	12
6	8.8	7.972	7.424	10.438	7.5301	8.16	8.6535	10.047	12
12	5	4.515	3.74	6.423	3.8889	4.5595	4.77025	5.9464	12
24	2.8	2.803	2.395	3.211	2.4201	2.7155	2.7905	3.0785	12

Model info for (a) Hist. Gumbel: R=31.92T^-0.731

	Estimate	Std. Error	t value	Pr(> t )
A	31.923	5.73E-01	55.68	3.53E-08
B	0.7310	1.29E-02	56.72	3.22E-08

Model info for (b) Hist. GEV: R=31.03T^-0.753

	Estimate	Std. Error	t value	Pr(> t )
A	31.028	4.93E-01	62.99	1.08E-09
B	0.7533	1.14E-02	66.04	8.10E-10

Model info for (c) Fut. EnsembleMin.: R=26.81T^-0.745

	Estimate	Std. Error	t value	Pr(> t )
A	26.815	4.72E-01	56.77	2.01E-09
B	0.7451	1.27E-02	58.90	1.61E-09

Model info for (d) Fut. Ensemble10thPercentile: R=27.42T^-0.745

	Estimate	Std. Error	t value	Pr(> t )
A	27.422	4.67E-01	58.78	1.63E-09
B	0.7455	1.22E-02	61.00	1.30E-09

Model info for (e) Fut. Ensemble90thPercentile: R=36.96T^-0.736

	Estimate	Std. Error	t value	Pr(> t )
A	36.962	5.34E-01	69.26	6.09E-10
B	0.7360	1.04E-02	71.01	5.25E-10

Model info for (f) Fut. EnsembleMax.: R=38.45T^-0.732

	Estimate	Std. Error	t value	Pr(> t )
A	38.449	5.16E-01	74.50	3.94E-10
B	0.7317	9.63E-03	75.95	3.51E-10

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**21. WINDSOR AIRPORT      2030S 10-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	101.1	104.403	87.305	123.326	90.0976	102.607	107.723	119.1614	12
0.5	68.2	67.996	57.329	78.464	59.1374	66.7745	69.57125	77.5433	12
1	43.1	41.682	34.852	48.502	36.0651	40.933	42.73725	47.5449	12
3	NA	16.609	13.495	17.761	14.0476	16.06	17.37375	17.4417	12
2	24.8	23.856	20.44	27.501	20.76	23.428	24.18825	26.5536	12
6	10.1	9.22	8.845	11.73	8.9496	9.4125	9.97625	11.3771	12
12	5.8	5.371	4.101	7.275	4.3997	5.368	5.59575	6.6921	12
24	3.2	3.244	2.636	3.469	2.7442	3.1585	3.28875	3.3915	12

Model info for (a) Hist. Gumbel: R=36.75T^-0.73

	Estimate	Std. Error	t value	Pr(> t )
A	36.753	7.12E-01	51.64	5.15E-08
B	0.7303	1.39E-02	52.56	4.72E-08

Model info for (b) Hist. GEV: R=36.53T^-0.758

	Estimate	Std. Error	t value	Pr(> t )
A	36.534	5.41E-01	67.47	7.13E-10
B	0.7577	1.07E-02	71.14	5.19E-10

Model info for (c) Fut. EnsembleMin.: R=30.96T^-0.748

	Estimate	Std. Error	t value	Pr(> t )
A	30.960	6.76E-01	45.80	7.26E-09
B	0.7482	1.57E-02	47.71	5.69E-09

Model info for (d) Fut. Ensemble10thPercentile: R=31.97T^-0.748

	Estimate	Std. Error	t value	Pr(> t )
A	31.973	6.06E-01	52.73	3.12E-09
B	0.7477	1.36E-02	54.89	2.46E-09

Model info for (e) Fut. Ensemble90thPercentile: R=42.43T^-0.745

	Estimate	Std. Error	t value	Pr(> t )
A	42.434	6.27E-01	67.65	7.02E-10
B	0.7451	1.06E-02	70.18	5.63E-10

Model info for (f) Fut. EnsembleMax.: R=44.07T^-0.743

	Estimate	Std. Error	t value	Pr(> t )
A	44.068	6.11E-01	72.14	4.77E-10
B	0.7426	9.95E-03	74.59	3.91E-10

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**22. WINDSOR AIRPORT      2030S 25-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	117.8	127.843	106.04	146.817	108.5414	127.5805	140.747	142.5017	12
0.5	80.2	81.032	68.527	90.428	70.2405	80.3015	87.38725	89.7802	12
1	50.9	50.172	42.07	56.162	43.1727	49.724	54.395	55.8431	12
3	NA	19.607	14.756	20.96	16.141	18.4915	19.008	20.448	12
2	29	27.523	23.836	30.714	23.9026	27.207	28.99925	29.6039	12
6	11.8	10.878	9.654	13.407	10.0499	11.2385	12.18075	13.2519	12
12	6.7	6.644	4.547	8.201	5.0586	6.7295	6.98975	7.61	12
24	3.7	3.83	2.882	4.11	3.152	3.6675	3.94	4.0837	12

Model info for (a) Hist. Gumbel: R=42.81T^-0.731

	Estimate	Std. Error	t value	Pr(> t )
A	42.812	9.02E-01	47.46	7.84E-08
B	0.7306	1.51E-02	48.31	7.18E-08

Model info for (b) Hist. GEV: R=44.3T^-0.765

	Estimate	Std. Error	t value	Pr(> t )
A	44.303	5.57E-01	79.47	2.67E-10
B	0.7647	9.05E-03	84.54	1.84E-10

Model info for (c) Fut. EnsembleMin.: R=36.26T^-0.774

	Estimate	Std. Error	t value	Pr(> t )
A	36.261	7.92E-01	45.76	7.29E-09
B	0.7744	1.57E-02	49.29	4.68E-09

Model info for (d) Fut. Ensemble10thPercentile: R=37.69T^-0.763

	Estimate	Std. Error	t value	Pr(> t )
A	37.692	6.74E-01	55.94	2.19E-09
B	0.7633	1.28E-02	59.40	1.53E-09

Model info for (e) Fut. Ensemble90thPercentile: R=50.11T^-0.754

	Estimate	Std. Error	t value	Pr(> t )
A	50.110	5.86E-01	85.45	1.73E-10
B	0.7541	8.41E-03	89.69	1.29E-10

Model info for (f) Fut. EnsembleMax.: R=51.61T^-0.754

	Estimate	Std. Error	t value	Pr(> t )
A	51.606	5.37E-01	96.14	8.53E-11
B	0.7544	7.47E-03	100.94	6.37E-11

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**23. WINDSOR AIRPORT      2030S 50-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	130.2	147.579	123.069	173.598	124.3123	149.732	161.703	171.8817	12
0.5	89.1	91.083	77.979	103.662	78.8366	91.3575	98.48125	102.6235	12
1	56.7	56.803	48.229	65.168	48.8891	57.0165	61.7375	64.4714	12
3	NA	21.94	15.597	24.012	17.6009	19.959	20.5255	22.924	12
2	32.2	30.086	26.033	33.079	26.5059	29.8035	32.28025	32.7613	12
6	13.1	12.168	10.129	17.756	10.8121	12.4545	14.11375	14.3359	12
12	7.5	7.749	4.869	8.793	5.5888	7.88	8.2745	8.3987	12
24	4.1	4.285	3.046	4.852	3.4379	3.9655	4.5315	4.7976	12

Model info for (a) Hist. Gumbel: R=47.45T^-0.729

	Estimate	Std. Error	t value	Pr(> t )
A	47.450	1.02E+00	46.39	8.79E-08
B	0.7286	1.55E-02	47.10	8.15E-08

Model info for (b) Hist. GEV: R=50.72T^-0.771

	Estimate	Std. Error	t value	Pr(> t )
A	50.718	5.79E-01	87.52	1.50E-10
B	0.7706	8.21E-03	93.81	9.89E-11

Model info for (c) Fut. EnsembleMin.: R=40.68T^-0.799

	Estimate	Std. Error	t value	Pr(> t )
A	40.677	8.87E-01	45.88	7.18E-09
B	0.7989	1.57E-02	50.94	3.84E-09

Model info for (d) Fut. Ensemble10thPercentile: R=42.33T^-0.777

	Estimate	Std. Error	t value	Pr(> t )
A	42.335	7.00E-01	60.47	1.38E-09
B	0.7773	1.19E-02	65.36	8.63E-10

Model info for (e) Fut. Ensemble90thPercentile: R=58.34T^-0.78

	Estimate	Std. Error	t value	Pr(> t )
A	58.338	4.62E-01	126.22	1.67E-11
B	0.7796	5.70E-03	136.81	1.03E-11

Model info for (f) Fut. EnsembleMax.: R=61.41T^-0.75

	Estimate	Std. Error	t value	Pr(> t )
A	61.410	1.05E+00	58.43	1.69E-09
B	0.7497	1.23E-02	60.98	1.31E-09

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**24. WINDSOR AIRPORT      2030S 100-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	142.5	169.398	141.518	214.311	143.5199	172.714	185.42775	210.5205	12
0.5	98	101.393	87.794	122.147	88.3648	101.1435	110.85675	120.5205	12
1	62.5	63.679	54.971	77.567	55.12	63.8285	69.6225	76.47	12
3	NA	24.352	16.355	27.434	18.9581	21.315	22.69825	25.6273	12
2	35.3	32.506	28.146	37.24	29.2239	31.611	35.54075	36.7649	12
6	14.4	13.504	10.516	23.833	11.5271	13.7055	15.298	16.696	12
12	8.2	9.003	5.183	10.174	6.1548	9.0645	9.35675	9.5846	12
24	4.5	4.756	3.194	5.716	3.7023	4.355	5.19125	5.642	12

Model info for (a) Hist. Gumbel: R=51.99T^-0.728

	Estimate	Std. Error	t value	Pr(> t )
A	51.992	1.16E+00	44.96	1.03E-07
B	0.7278	1.60E-02	45.60	9.58E-08

Model info for (b) Hist. GEV: R=57.7T^-0.777

	Estimate	Std. Error	t value	Pr(> t )
A	57.702	6.87E-01	83.93	1.93E-10
B	0.7769	8.57E-03	90.68	1.21E-10

Model info for (c) Fut. EnsembleMin.: R=45.22T^-0.823

	Estimate	Std. Error	t value	Pr(> t )
A	45.224	1.02E+00	44.29	8.87E-09
B	0.8232	1.63E-02	50.63	3.98E-09

Model info for (d) Fut. Ensemble10thPercentile: R=47.62T^-0.796

	Estimate	Std. Error	t value	Pr(> t )
A	47.619	7.05E-01	67.57	7.07E-10
B	0.7960	1.07E-02	74.74	3.86E-10

Model info for (e) Fut. Ensemble90thPercentile: R=69.78T^-0.797

	Estimate	Std. Error	t value	Pr(> t )
A	69.777	5.66E-01	123.38	1.91E-11
B	0.7966	5.83E-03	136.58	1.04E-11

Model info for (f) Fut. EnsembleMax.: R=76.08T^-0.747

	Estimate	Std. Error	t value	Pr(> t )
A	76.079	2.20E+00	34.52	3.94E-08
B	0.7471	2.08E-02	35.90	3.11E-08

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**25. WINDSOR AIRPORT      2050S 2-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	68	66.848	72.518	97.633	72.7623	83.8715	85.21675	89.5375	8
0.5	44.4	43.748	48.652	63.182	48.9145	55.715	56.13325	58.7881	8
1	27.5	26.26	29.386	39.352	29.6842	33.5395	34.02325	35.9899	8
3	NA	11.121	12.297	16.532	12.3873	13.9765	14.2815	15.1005	8
2	16.4	16.001	17.905	22.414	18.0275	20.1255	20.45675	21.119	8
6	6.8	6.286	6.098	9.3	6.1288	7.858	8.54675	8.9801	8
12	3.9	3.434	3.626	5.241	3.6512	4.5065	4.7575	4.9204	8
24	2.2	2.172	2.402	3.229	2.4195	2.7295	2.7895	2.9497	8

Model info for (a) Hist. Gumbel: R=24.69T^-0.731

	Estimate	Std. Error	t value	Pr(> t )
A	24.693	3.48E-01	71.03	1.05E-08
B	0.7310	1.01E-02	72.35	9.55E-09

Model info for (b) Hist. GEV: R=23.72T^-0.748

	Estimate	Std. Error	t value	Pr(> t )
A	23.720	3.44E-01	68.87	6.31E-10
B	0.7477	1.04E-02	71.69	4.96E-10

Model info for (c) Fut. EnsembleMin.: R=25.27T^-0.761

	Estimate	Std. Error	t value	Pr(> t )
A	25.270	5.38E-01	46.95	6.26E-09
B	0.7608	1.53E-02	49.70	4.45E-09

Model info for (d) Fut. Ensemble10thPercentile: R=25.39T^-0.76

	Estimate	Std. Error	t value	Pr(> t )
A	25.387	5.49E-01	46.22	6.87E-09
B	0.7599	1.55E-02	48.87	4.92E-09

Model info for (e) Fut. Ensemble90thPercentile: R=32.41T^-0.733

	Estimate	Std. Error	t value	Pr(> t )
A	32.409	4.42E-01	73.29	4.34E-10
B	0.7334	9.79E-03	74.88	3.82E-10

Model info for (f) Fut. EnsembleMax.: R=34.92T^-0.742

	Estimate	Std. Error	t value	Pr(> t )
A	34.921	4.40E-01	79.37	2.69E-10
B	0.7419	9.05E-03	82.00	2.22E-10

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**26. WINDSOR AIRPORT      2050S 5-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	87.9	88.129	95.577	143.638	97.1842	115.517	117.9195	126.5055	8
0.5	58.7	58.08	63.127	84.253	63.2502	75.598	76.37275	79.2046	8
1	36.9	35.31	39.016	54.038	39.2274	46.2805	47.11475	49.4495	8
3	NA	14.599	16.32	23.125	16.4621	17.5255	18.575	20.8409	8
2	21.5	20.773	22.422	28.105	22.7391	26.493	27.24	27.9195	8
6	8.8	8.073	8.275	11.895	8.2967	10.5525	11.2195	11.5933	8
12	5	4.561	5.062	7.806	5.2601	6.317	6.7985	7.2278	8
24	2.8	2.851	3.188	4.517	3.2153	3.4225	3.62775	4.0704	8

Model info for (a) Hist. Gumbel: R=31.92T^-0.731

	Estimate	Std. Error	t value	Pr(> t )
A	31.923	5.73E-01	55.68	3.53E-08
B	0.7310	1.29E-02	56.72	3.22E-08

Model info for (b) Hist. GEV: R=31.16T^-0.75

	Estimate	Std. Error	t value	Pr(> t )
A	31.165	4.80E-01	64.93	8.98E-10
B	0.7502	1.11E-02	67.80	6.93E-10

Model info for (c) Fut. EnsembleMin.: R=33.66T^-0.753

	Estimate	Std. Error	t value	Pr(> t )
A	33.660	5.89E-01	57.16	1.93E-09
B	0.7531	1.26E-02	59.92	1.45E-09

Model info for (d) Fut. Ensemble10thPercentile: R=34.19T^-0.754

	Estimate	Std. Error	t value	Pr(> t )
A	34.185	5.59E-01	61.12	1.29E-09
B	0.7540	1.18E-02	64.14	9.66E-10

Model info for (e) Fut. Ensemble90thPercentile: R=45.09T^-0.744

	Estimate	Std. Error	t value	Pr(> t )
A	45.091	3.96E-01	113.95	3.08E-11
B	0.7443	6.30E-03	118.09	2.49E-11

Model info for (f) Fut. EnsembleMax.: R=49.73T^-0.765

	Estimate	Std. Error	t value	Pr(> t )
A	49.728	5.02E-01	99.09	7.12E-11
B	0.7652	7.25E-03	105.48	4.90E-11

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**27. WINDSOR AIRPORT      2050S 10-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	101.1	104.403	116.346	180.977	120.7945	140.5105	144.11675	159.5969	8
0.5	68.2	67.996	73.907	97.464	74.488	89.2055	91.53	93.5496	8
1	43.1	41.682	46.693	63.669	46.8428	55.272	57.0255	59.0868	8
3	NA	17.238	18.773	27.689	19.1251	19.8635	21.60575	25.0871	8
2	24.8	23.856	25.228	32.233	26.0379	30.254	31.37275	32.2141	8
6	10.1	9.32	10.186	13.447	10.2637	12.8575	13.07025	13.2069	8
12	5.8	5.492	6.351	9.871	6.9635	7.6865	8.86125	9.1857	8
24	3.2	3.367	3.667	5.408	3.7356	3.8795	4.22	4.8998	8

Model info for (a) Hist. Gumbel: R=36.75T^-0.73

	Estimate	Std. Error	t value	Pr(> t )
A	36.753	7.12E-01	51.64	5.15E-08
B	0.7303	1.39E-02	52.56	4.72E-08

Model info for (b) Hist. GEV: R=36.79T^-0.753

	Estimate	Std. Error	t value	Pr(> t )
A	36.786	5.18E-01	70.97	5.27E-10
B	0.7528	1.01E-02	74.35	3.98E-10

Model info for (c) Fut. EnsembleMin.: R=40.91T^-0.754

	Estimate	Std. Error	t value	Pr(> t )
A	40.915	5.11E-01	80.07	2.55E-10
B	0.7541	8.97E-03	84.04	1.91E-10

Model info for (d) Fut. Ensemble10thPercentile: R=42.42T^-0.755

	Estimate	Std. Error	t value	Pr(> t )
A	42.416	5.27E-01	80.42	2.49E-10
B	0.7551	8.94E-03	84.50	1.85E-10

Model info for (e) Fut. Ensemble90thPercentile: R=55.55T^-0.761

	Estimate	Std. Error	t value	Pr(> t )
A	55.554	6.76E-01	82.22	2.18E-10
B	0.7612	8.74E-03	87.09	1.54E-10

Model info for (f) Fut. EnsembleMax.: R=60.99T^-0.784

	Estimate	Std. Error	t value	Pr(> t )
A	60.991	1.18E+00	51.85	3.46E-09
B	0.7844	1.39E-02	56.53	2.06E-09

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**28. WINDSOR AIRPORT      2050S 25-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	117.8	127.843	151.271	237.772	157.9462	175.1975	187.33125	212.9262	8
0.5	80.2	81.032	89.429	115.58	90.9725	105.4975	113.138	114.026	8
1	50.9	50.172	58.251	75.734	58.2692	66.408	71.6275	72.9949	8
3	NA	20.884	20.675	33.694	21.1811	24.519	26.416	30.7498	8
2	29	27.523	28.698	39.257	30.4466	34.284	35.24725	37.7695	8
6	11.8	10.972	13.373	16.884	13.5221	15.088	15.6135	16.5732	8
12	6.7	6.908	8.525	12.991	9.211	10.5195	12.1425	12.7089	8
24	3.7	4.079	4.038	6.581	4.1367	4.789	5.159	6.0056	8

Model info for (a) Hist. Gumbel: R=42.81T^-0.731

	Estimate	Std. Error	t value	Pr(> t )
A	42.812	9.02E-01	47.46	7.84E-08
B	0.7306	1.51E-02	48.31	7.18E-08

Model info for (b) Hist. GEV: R=44.76T^-0.757

	Estimate	Std. Error	t value	Pr(> t )
A	44.761	5.48E-01	81.73	2.26E-10
B	0.7572	8.79E-03	86.12	1.65E-10

Model info for (c) Fut. EnsembleMin.: R=52.66T^-0.761

	Estimate	Std. Error	t value	Pr(> t )
A	52.660	6.61E-01	79.64	2.64E-10
B	0.7612	9.02E-03	84.36	1.87E-10

Model info for (d) Fut. Ensemble10thPercentile: R=54.76T^-0.764

	Estimate	Std. Error	t value	Pr(> t )
A	54.764	8.07E-01	67.85	6.89E-10
B	0.7640	1.06E-02	72.12	4.78E-10

Model info for (e) Fut. Ensemble90thPercentile: R=72.85T^-0.773

	Estimate	Std. Error	t value	Pr(> t )
A	72.847	1.59E+00	45.76	7.30E-09
B	0.7735	1.57E-02	49.22	4.72E-09

Model info for (f) Fut. EnsembleMax.: R=78.54T^-0.799

	Estimate	Std. Error	t value	Pr(> t )
A	78.538	2.22E+00	35.42	3.38E-08
B	0.7987	2.03E-02	39.31	1.81E-08

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**29. WINDSOR AIRPORT      2050S 50-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	130.2	150.152	181.98	288.164	184.283	213.862	228.066	262.9983	8
0.5	89.1	91.083	102.495	135.791	105.1291	117.2255	126.20775	132.4527	8
1	56.7	56.803	68.22	84.684	68.3691	74.37	84.363	84.6315	8
3	NA	23.835	21.883	38.327	22.1238	28.141	31.21875	35.1609	8
2	32.2	30.086	31.218	44.854	33.3208	36.567	38.249	41.6984	8
6	13.1	12.256	15.652	20.344	16.0475	16.6025	17.81125	19.9828	8
12	7.5	8.165	10.645	16.414	10.9299	13.5495	15.47525	15.9422	8
24	4.1	4.655	4.274	7.486	4.3209	5.4965	6.09725	6.8672	8

Model info for (a) Hist. Gumbel: R=47.45T^-0.729

	Estimate	Std. Error	t value	Pr(> t )
A	47.450	1.02E+00	46.39	8.79E-08
B	0.7286	1.55E-02	47.10	8.15E-08

Model info for (b) Hist. GEV: R=51.9T^-0.766

	Estimate	Std. Error	t value	Pr(> t )
A	51.899	6.03E-01	86.06	1.66E-10
B	0.7664	8.35E-03	91.75	1.13E-10

Model info for (c) Fut. EnsembleMin.: R=62.69T^-0.769

	Estimate	Std. Error	t value	Pr(> t )
A	62.687	1.26E+00	49.56	4.52E-09
B	0.7687	1.45E-02	53.00	3.03E-09

Model info for (d) Fut. Ensemble10thPercentile: R=63.78T^-0.765

	Estimate	Std. Error	t value	Pr(> t )
A	63.776	1.27E+00	50.24	4.17E-09
B	0.7654	1.43E-02	53.50	2.86E-09

Model info for (e) Fut. Ensemble90thPercentile: R=88.94T^-0.782

	Estimate	Std. Error	t value	Pr(> t )
A	88.939	2.60E+00	34.17	4.18E-08
B	0.7817	2.11E-02	37.14	2.54E-08

Model info for (f) Fut. EnsembleMax.: R=94.88T^-0.801

	Estimate	Std. Error	t value	Pr(> t )
A	94.881	3.25E+00	29.17	1.07E-07
B	0.8009	2.47E-02	32.46	5.68E-08

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**30. WINDSOR AIRPORT      2050S 100-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	142.5	176.418	204.099	346.426	215.0456	257.397	286.71275	323.8391	8
0.5	98	101.393	116.937	158.387	118.9523	128.862	139.1475	152.9529	8
1	62.5	63.679	76.417	99.473	76.6312	84.082	94.5515	98.5385	8
3	NA	26.988	22.758	43.082	22.8826	32.178	36.7605	39.7143	8
2	35.3	32.506	33.675	50.779	35.2017	39.2375	41.2	45.4513	8
6	14.4	13.581	17.258	24.45	17.3707	19.6335	21.40625	24.0356	8
12	8.2	9.617	12.773	21.742	13.1412	16.618	19.529	21.5159	8
24	4.5	5.271	4.445	8.414	4.4695	6.285	7.1795	7.7567	8

Model info for (a) Hist. Gumbel: R=51.99T^-0.728

	Estimate	Std. Error	t value	Pr(> t )
A	51.992	1.16E+00	44.96	1.03E-07
B	0.7278	1.60E-02	45.60	9.58E-08

Model info for (b) Hist. GEV: R=60.01T^-0.778

	Estimate	Std. Error	t value	Pr(> t )
A	60.005	8.80E-01	68.15	6.72E-10
B	0.7779	1.06E-02	73.71	4.20E-10

Model info for (c) Fut. EnsembleMin.: R=70.5T^-0.767

	Estimate	Std. Error	t value	Pr(> t )
A	70.500	1.90E+00	37.17	2.53E-08
B	0.7668	1.93E-02	39.65	1.72E-08

Model info for (d) Fut. Ensemble10thPercentile: R=73.1T^-0.778

	Estimate	Std. Error	t value	Pr(> t )
A	73.096	2.08E+00	35.18	3.52E-08
B	0.7783	2.04E-02	38.07	2.19E-08

Model info for (e) Fut. Ensemble90thPercentile: R=109.58T^-0.781

	Estimate	Std. Error	t value	Pr(> t )
A	109.576	4.66E+00	23.49	3.90E-07
B	0.7812	3.06E-02	25.52	2.39E-07

Model info for (f) Fut. EnsembleMax.: R=115.04T<sup>-0.795</sup>

	Estimate	Std. Error	t value	Pr(> t )
A	115.041	4.98E+00	23.11	4.30E-07
B	0.7947	3.11E-02	25.52	2.38E-07

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**31. WINDSOR AIRPORT      2090S 2-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	68	66.848	67.77	100.962	68.4804	78.413	87.479	97.016	12
0.5	44.4	43.748	44.5	65.894	44.8724	51.4505	57.6825	63.5379	12
1	27.5	26.233	26.684	40.332	26.9129	30.948	35.05425	38.1522	12
3	NA	11.121	11.932	16.681	11.9791	13.709	14.7515	15.9902	12
2	16.4	15.791	16.062	23.201	16.2876	18.5585	20.65275	22.914	12
6	6.8	6.188	6.234	10.145	6.3433	7.4625	8.20475	9.4892	12
12	3.9	3.434	3.86	5.568	3.8685	4.2125	4.512	5.2437	12
24	2.2	2.172	2.174	3.258	2.1915	2.5015	2.83125	2.9841	12

Model info for (a) Hist. Gumbel: R=24.69T^-0.731

	Estimate	Std. Error	t value	Pr(> t )
A	24.693	3.48E-01	71.03	1.05E-08
B	0.7310	1.01E-02	72.35	9.55E-09

Model info for (b) Hist. GEV: R=23.65T^-0.75

	Estimate	Std. Error	t value	Pr(> t )
A	23.652	3.39E-01	69.84	5.80E-10
B	0.7498	1.03E-02	72.89	4.49E-10

Model info for (c) Fut. EnsembleMin.: R=24.23T^-0.742

	Estimate	Std. Error	t value	Pr(> t )
A	24.234	3.23E-01	75.01	3.78E-10
B	0.7421	9.57E-03	77.51	3.10E-10

Model info for (d) Fut. Ensemble10thPercentile: R=24.49T^-0.742

	Estimate	Std. Error	t value	Pr(> t )
A	24.486	3.17E-01	77.14	3.19E-10
B	0.7421	9.31E-03	79.72	2.62E-10

Model info for (e) Fut. Ensemble90thPercentile: R=34.74T^-0.741

	Estimate	Std. Error	t value	Pr(> t )
A	34.737	4.88E-01	71.15	5.19E-10
B	0.7412	1.01E-02	73.44	4.29E-10

Model info for (f) Fut. EnsembleMax.: R=36.5T^-0.734

	Estimate	Std. Error	t value	Pr(> t )
A	36.497	4.80E-01	76.04	3.48E-10
B	0.7343	9.44E-03	77.78	3.04E-10

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**32. WINDSOR AIRPORT      2090S 5-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	87.9	88.129	91.156	138.383	95.7681	106.583	111.99825	129.3324	12
0.5	58.7	58.08	60.076	86.637	62.4046	68.604	72.33925	85.0228	12
1	36.9	35.31	36.523	53.847	38.0996	42.141	44.499	51.7572	12
3	NA	14.351	15.931	20.646	16.1087	16.804	17.7065	18.6584	12
2	21.5	20.773	21.487	30.764	22.0297	24.128	25.481	28.7324	12
6	8.8	7.972	8.376	12.586	9.274	9.884	10.84825	11.995	12
12	5	4.515	4.874	8.267	4.9313	5.3	5.98575	7.1517	12
24	2.8	2.803	2.867	4.032	2.9698	3.2425	3.37725	3.6468	12

Model info for (a) Hist. Gumbel: R=31.92T^-0.731

	Estimate	Std. Error	t value	Pr(> t )
A	31.923	5.73E-01	55.68	3.53E-08
B	0.7310	1.29E-02	56.72	3.22E-08

Model info for (b) Hist. GEV: R=31.03T^-0.753

	Estimate	Std. Error	t value	Pr(> t )
A	31.028	4.93E-01	62.99	1.08E-09
B	0.7533	1.14E-02	66.04	8.10E-10

Model info for (c) Fut. EnsembleMin.: R=32.33T^-0.748

	Estimate	Std. Error	t value	Pr(> t )
A	32.330	4.86E-01	66.55	7.74E-10
B	0.7481	1.08E-02	69.31	6.07E-10

Model info for (d) Fut. Ensemble10thPercentile: R=34.06T^-0.746

	Estimate	Std. Error	t value	Pr(> t )
A	34.062	5.13E-01	66.38	7.86E-10
B	0.7460	1.08E-02	68.94	6.27E-10

Model info for (e) Fut. Ensemble90thPercentile: R=45.74T^-0.75

	Estimate	Std. Error	t value	Pr(> t )
A	45.736	7.24E-01	63.21	1.05E-09
B	0.7502	1.14E-02	66.01	8.13E-10

Model info for (f) Fut. EnsembleMax.: R=49.22T^-0.746

	Estimate	Std. Error	t value	Pr(> t )
A	49.218	6.20E-01	79.39	2.69E-10
B	0.7459	9.05E-03	82.44	2.15E-10

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**33. WINDSOR AIRPORT      2090S 10-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	101.1	104.403	112.503	166.863	119.699	127.018	139.5415	155.01	11
0.5	68.2	67.996	73.271	100.955	78.1179	81.047	87.6975	99.3585	12
1	43.1	41.682	44.916	63.082	47.9177	49.929	54.59975	61.2248	12
3	NA	16.609	17.804	22.875	18.3205	19.522	20.723	21.2555	12
2	24.8	23.856	25.707	35.42	26.7912	28.416	29.121	32.0691	12
6	10.1	9.22	10.104	15.698	10.6558	11.7285	13.02625	14.0689	12
12	5.8	5.371	5.572	10.595	5.7003	6.1325	7.27375	8.6905	12
24	3.2	3.244	3.465	4.468	3.4867	3.813	4.06525	4.1557	12

Model info for (a) Hist. Gumbel: R=36.75T^-0.73

	Estimate	Std. Error	t value	Pr(> t )
A	36.753	7.12E-01	51.64	5.15E-08
B	0.7303	1.39E-02	52.56	4.72E-08

Model info for (b) Hist. GEV: R=36.53T^-0.758

	Estimate	Std. Error	t value	Pr(> t )
A	36.534	5.41E-01	67.47	7.13E-10
B	0.7577	1.07E-02	71.14	5.19E-10

Model info for (c) Fut. EnsembleMin.: R=39.29T^-0.759

	Estimate	Std. Error	t value	Pr(> t )
A	39.294	6.14E-01	63.99	9.79E-10
B	0.7591	1.12E-02	67.59	7.06E-10

Model info for (d) Fut. Ensemble10thPercentile: R=41.42T^-0.766

	Estimate	Std. Error	t value	Pr(> t )
A	41.419	7.20E-01	57.51	1.86E-09
B	0.7659	1.25E-02	61.27	1.27E-09

Model info for (e) Fut. Ensemble90thPercentile: R=54.43T^-0.755

	Estimate	Std. Error	t value	Pr(> t )
A	54.429	8.31E-01	65.48	8.53E-10
B	0.7552	1.10E-02	68.82	6.33E-10

Model info for (f) Fut. EnsembleMax.: R=59.72T^-0.741

	Estimate	Std. Error	t value	Pr(> t )
A	59.721	9.90E-01	60.33	1.39E-09
B	0.7412	1.19E-02	62.27	1.15E-09

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**34. WINDSOR AIRPORT      2090S 25-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	117.8	127.843	142.983	207.699	148.086	165.4655	185.70325	196.3266	12
0.5	80.2	81.032	90.629	129.068	93.9484	106.034	114.62675	120.0269	12
1	50.9	50.172	56.114	82.178	58.3428	66.151	72.3915	75.0216	12
3	NA	19.607	19.714	30.909	19.7253	22.815	25.55275	27.1075	12
2	29	27.523	30.776	40.831	30.9041	34.3115	36.501	38.6892	12
6	11.8	10.878	12.233	25.007	12.4752	13.812	15.66725	19.7717	12
12	6.7	6.644	6.403	14.34	6.5374	7.3095	9.3715	11.0236	12
24	3.7	3.83	3.855	6.037	3.9024	4.7535	5.191	5.3008	12

Model info for (a) Hist. Gumbel: R=42.81T^-0.731

	Estimate	Std. Error	t value	Pr(> t )
A	42.812	9.02E-01	47.46	7.84E-08
B	0.7306	1.51E-02	48.31	7.18E-08

Model info for (b) Hist. GEV: R=44.3T^-0.765

	Estimate	Std. Error	t value	Pr(> t )
A	44.303	5.57E-01	79.47	2.67E-10
B	0.7647	9.05E-03	84.54	1.84E-10

Model info for (c) Fut. EnsembleMin.: R=48.46T^-0.781

	Estimate	Std. Error	t value	Pr(> t )
A	48.456	8.09E-01	59.87	1.46E-09
B	0.7808	1.20E-02	64.99	8.92E-10

Model info for (d) Fut. Ensemble10thPercentile: R=49.88T^-0.785

	Estimate	Std. Error	t value	Pr(> t )
A	49.885	8.69E-01	57.41	1.88E-09
B	0.7852	1.25E-02	62.66	1.11E-09

Model info for (e) Fut. Ensemble90thPercentile: R=70.04T^-0.744

	Estimate	Std. Error	t value	Pr(> t )
A	70.042	1.06E+00	66.12	8.05E-10
B	0.7436	1.09E-02	68.46	6.53E-10

Model info for (f) Fut. EnsembleMax.: R=78.86T^-0.699

	Estimate	Std. Error	t value	Pr(> t )
A	78.864	1.79E+00	44.13	9.07E-09
B	0.6987	1.62E-02	43.04	1.05E-08

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**35. WINDSOR AIRPORT      2090S 50-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	130.2	147.579	162.27	253.099	168.8436	195.015	225.2655	243.0523	12
0.5	89.1	91.083	100.151	175.488	104.1469	124.946	138.825	145.3434	12
1	56.7	56.803	62.457	113.535	65.2897	78.885	87.83175	93.3009	12
3	NA	21.94	20.035	42.099	20.2296	24.777	29.571	33.6495	12
2	32.2	30.086	33.081	48.729	33.2731	38.8795	42.26975	46.2053	12
6	13.1	12.168	13.31	36.079	13.6784	15.6715	17.00925	27.8985	12
12	7.5	7.749	6.82	17.845	7.3027	8.2865	11.23975	13.1128	12
24	4.1	4.285	4.045	8.223	4.1873	5.3145	6.507	6.8223	12

Model info for (a) Hist. Gumbel: R=47.45T^-0.729

	Estimate	Std. Error	t value	Pr(> t )
A	47.450	1.02E+00	46.39	8.79E-08
B	0.7286	1.55E-02	47.10	8.15E-08

Model info for (b) Hist. GEV: R=50.72T^-0.771

	Estimate	Std. Error	t value	Pr(> t )
A	50.718	5.79E-01	87.52	1.50E-10
B	0.7706	8.21E-03	93.81	9.89E-11

Model info for (c) Fut. EnsembleMin.: R=53.81T^-0.796

	Estimate	Std. Error	t value	Pr(> t )
A	53.814	8.90E-01	60.43	1.38E-09
B	0.7964	1.19E-02	66.88	7.51E-10

Model info for (d) Fut. Ensemble10thPercentile: R=55.99T^-0.796

	Estimate	Std. Error	t value	Pr(> t )
A	55.991	8.82E-01	63.50	1.03E-09
B	0.7964	1.13E-02	70.28	5.58E-10

Model info for (e) Fut. Ensemble90thPercentile: R=88.56T^-0.728

	Estimate	Std. Error	t value	Pr(> t )
A	88.555	2.18E+00	40.55	1.50E-08
B	0.7284	1.77E-02	41.16	1.38E-08

Model info for (f) Fut. EnsembleMax.: R=100.41T^-0.667

	Estimate	Std. Error	t value	Pr(> t )
A	100.410	3.21E+00	31.33	7.03E-08
B	0.6674	2.28E-02	29.26	1.06E-07

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**36. WINDSOR AIRPORT      2090S 100-YEAR EVENT**

Duration	OBS_GUM	OBS_GEV	MIN	MAX	P10	P50	P75	P90	EMS
0.25	142.5	169.398	183.324	329.133	191.9028	229.7055	272.15275	304.7169	12
0.5	98	101.393	109.728	242.499	114.7103	141.341	171.04975	190.9384	12
1	62.5	63.679	68.914	159.401	72.5052	89.9915	110.007	124.3782	12
3	NA	24.352	20.253	58.47	20.4114	26.579	34.85375	43.0457	12
2	35.3	32.506	35.179	61.663	35.511	44.079	48.437	57.1592	12
6	14.4	13.504	14.303	52.563	14.7382	17.8215	18.98825	40.1219	12
12	8.2	9.003	7.192	22.088	8.1159	9.423	13.45875	15.5394	12
24	4.5	4.756	4.2	11.42	4.4747	6.1275	8.03725	9.0031	12

Model info for (a) Hist. Gumbel: R=51.99T^-0.728

	Estimate	Std. Error	t value	Pr(> t )
A	51.992	1.16E+00	44.96	1.03E-07
B	0.7278	1.60E-02	45.60	9.58E-08

Model info for (b) Hist. GEV: R=57.7T^-0.777

	Estimate	Std. Error	t value	Pr(> t )
A	57.702	6.87E-01	83.93	1.93E-10
B	0.7769	8.57E-03	90.68	1.21E-10

Model info for (c) Fut. EnsembleMin.: R=59.33T^-0.814

	Estimate	Std. Error	t value	Pr(> t )
A	59.331	9.76E-01	60.81	1.33E-09
B	0.8140	1.18E-02	68.75	6.37E-10

Model info for (d) Fut. Ensemble10thPercentile: R=62.44T^-0.81

	Estimate	Std. Error	t value	Pr(> t )
A	62.438	9.04E-01	69.10	6.18E-10
B	0.8101	1.04E-02	77.76	3.05E-10

Model info for (e) Fut. Ensemble90thPercentile: R=114.02T^-0.709

	Estimate	Std. Error	t value	Pr(> t )
A	114.020	4.30E+00	26.53	1.89E-07
B	0.7094	2.70E-02	26.25	2.02E-07

Model info for (f) Fut. EnsembleMax.: R=133.51T^-0.652

	Estimate	Std. Error	t value	Pr(> t )
A	133.508	5.63E+00	23.71	3.70E-07
B	0.6517	3.01E-02	21.65	6.33E-07